

Contract Provisions

For Construction of:

SR 16

MP 0.85 TO MP 4.67

UNION AVE. TO JACKSON AVE. - HOV

PIERCE COUNTY

**Complete Replacement
Volume 2 of 2
Addendum #11**

STATE PROJECT



**Washington State
Department of Transportation**

APPENDIX A

Implementing Agreement Between the Washington State Department of Ecology and the Washington State Department of Transportation

IMPLEMENTING AGREEMENT
Between
THE WASHINGTON STATE
DEPARTMENT OF ECOLOGY
and
THE WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION

REGARDING COMPLIANCE WITH THE STATE OF WASHINGTON
SURFACE WATER QUALITY STANDARDS

THIS IMPLEMENTING AGREEMENT (IA) is being adopted pursuant to the Washington State Department of Ecology, (Ecology), and the Washington State Department of Transportation, (WSDOT) Memorandum of Agreement dated August 4, 1988. The 1988 MOA states that the responsibilities of the two agencies requires coordination of technical and environmental information to provide a timely and efficient review of permit applications. Implementing agreements are intended as supplements to the MOA, to describe specific procedures to enhance coordination and cooperation, and reduce the time required in the permit process.

I. PURPOSE AND SCOPE

Numerous WSDOT projects require work in or adjacent to waters of the state. This agreement is meant to replace the WSDOT General Short Term Water Quality Modification issued April, 1997, and to assist WSDOT in maintaining compliance with the aquatic laws and regulations of the State of Washington.

II. CRITERIA FOR USE

The Agreement is intended for use by WSDOT and WSDOT hired contractors. To maintain compliance with the Water Quality Standards (Standards), every WSDOT project shall meet the following:

1. WSDOT shall comply with the water quality criteria specified in Chapter 173-201A WAC, and RCW 90.48 Water Pollution Control. Failure to comply with the State's Water Quality Standards may result in the issuance of civil penalties or other actions, whether administrative or judicial. Parties anticipate that compliance with conditions of this agreement should result in meeting applicable Water Quality Standards.
2. For work in or near the water WSDOT shall comply with the general conditions and activity specific conditions within this Agreement for the type of activity to be completed, and any other appropriate Best Management Practice (BMP) necessary to ensure the Standards are met. If a proposed project does not meet the specific activity types listed, WSDOT shall be responsible for providing protective measures to ensure compliance with the Standards.
3. This document does not relieve WSDOT from complying with all requirements of an applicable NPDES Permit, nor does this Agreement authorize the discharge of pollutants to waters of the state. If a discharge is expected, contact Ecology's NPDES section for approval, or submit a JARPA application for a CWA Section 401 Water Quality Certification when a CWA Section 404 permit is required from the Corps of Engineers.
4. This Agreement does not relieve the applicant from the responsibility of meeting applicable regulations of other federal, state, and local agencies. In addition, where highway project activities occur in or adjacent to waters within Native American Indian Reservation boundaries, contact with the Tribe shall be made to address Tribal regulations. Some Tribes have developed and adopted Standards separate from state or federal water quality criteria.

5. This agreement does not reduce or supersede any requirements of the Model Toxics Control Act, or rules promulgated thereunder. DOT shall contact Ecology Regional Offices for approval of a MTCA cleanup.

III. IMPLEMENTATION (ROLES AND RESPONSIBILITIES)

A. Ecology agrees to:

1. Provide technical support on water quality issues for WSDOT projects and policy development;
2. The Department of Ecology retains continuing jurisdiction to gain compliance through supplemental Agreement or enforcement action, including orders and penalties.
3. Provide expedited review of WSDOT applications for NPDES permits for experimental BMPs, and for CWA Section 401 water quality certifications. The parties will amend this agreement with the expedited review process within 3 months of execution of this Agreement. An expedited review process for State Waste Discharge Permits will also be considered.

B. WSDOT agrees to:

1. Comply with the State of Washington's Surface Water Quality Standards;
2. Immediately notify Ecology's Regional Office, per general condition #14, in the event of a spill, or if the conditions of the Agreement are violated either by WSDOT, or a WSDOT hired contractor;
3. Notify Ecology through submittal of a JARPA application, or phone contact for the following:
 - a. all new construction projects that require a CWA Section 401 Water Quality Certification for which Ecology has jurisdiction (JARPA application required ñ contact the Federal Permits Unit, SEA Program);
 - b. a phone or e-mail contact to Ecology's Region Water Quality Program prior to starting work on a project that is large, contentious, or when a significant amount of work in the water will take place, this will allow Ecology regional office to be prepared for responses to citizen complaints if they are received;
 - c. any activity resulting in a discharge to waters of the state that is not covered by a 401 Water Quality Certification ñ an NPDES or State Waste discharge permit will be required ñ notify Ecology's Regional Office with jurisdiction in the location of the project;
 - d. any project that does not comply with the conditions listed in the Agreement.
4. Attach applicable conditions of this Agreement to the contract documents for projects in or adjacent to waters of the State to make sure contractors are aware of the requirements prior to bidding on the job. Prior to the start of work, WSDOT shall review the conditions with the selected contractor, and a copy of the Agreement with the applicable conditions specified shall be located at the job site at all times during construction.
5. Require any contractor working on WSDOT projects to comply with conditions of this Agreement and any other conditions or methods to ensure water quality compliance for the site. WSDOT is ultimately responsible for compliance with the Standards, however WSDOT hired contractors may also be held liable for any water quality violations, especially in cases of violations resulting from contractor negligence.

IV. REVISIONS

Revisions to this Implementation Agreement shall be provided in writing, and agreed to and signed by both parties.

Ecology reserves the right to issue stop work orders, notices of violations, and penalties if WSDOT violates the water quality criteria of the State of Washington.

Revisions to the Agreement proposed by WSDOT shall originate with the WSDOT Environmental Affairs Office. If the parties to the Agreement agree, revisions that are needed immediately may be made prior to the yearly review as defined below.

This Agreement shall be reviewed at the end of the first year following implementation, and as needed thereafter (not to exceed every five years). During this review, all proposed changes shall be reviewed and agreed upon by both parties, and changes shall be made one time each year.

This Agreement is to be effective upon the date of signature below. This agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this agreement shall be deemed to exist or to bind either of the parties hereto. This agreement may be terminated by either party upon thirty (30) days written notice to the other party.

IN WITNESS WHEREOF, the parties execute this agreement.

**WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION**

**WASHINGTON STATE
DEPARTMENT OF ECOLOGY**

/s/ Jerry W. Alb

/s/ Megan White

**Jerry Alb, Director
Environmental Services
Washington State Dept. of Transportation**

**Megan White, Program Manager
Water Quality Program
Washington State Dept. of Ecology**

2/13/98 DATE

2/12/98 DATE

Approval as to form:

/s/ Anne L. Spangler

/s/ Ronald L. Lavigne

Assistant Attorney General - Ann Spangler

Assistant Attorney General - Ron Lavigne

Conditions for Administrative Agreement

Dealing with Water Quality Standards Compliance for the
Washington State Department of Transportation

GENERAL CONDITIONS

The following general conditions, and conditions outlined in the Implementing Agreement shall be met on site during construction for any project occurring in or near the water. Development of new technology, techniques, or Best Management Practices may be used by WSDOT providing the methods used result in compliance with the standards.

1. Contractors working on WSDOT projects are required to comply with the Standards. WSDOT is ultimately responsible for compliance with the Standards even when the work is contracted out. However both WSDOT and the contractor may be held liable for any violation of the Standards.
2. The activities must comply with all water quality protection related conditions contained in the Washington State Department of Fish and Wildlife (WDFW) Hydraulic Project Approval (HPA) including time limitations.
3. Copies of the general conditions and the specific conditions that apply to the project site contained within this Agreement shall be reviewed with all hired contractors prior to the start of the project, and kept on the job site at all times during construction.

4. **Water Quality**

- 4a. All work in or near the water, and water discharged from the site shall meet the State's Water Quality Standards, WAC 173-201A. A mixing zone for turbidity is authorized within WAC 173.201A-030 during and immediately after necessary in-water or shoreline construction activities that result in the disturbance of in-place sediments. Use of a turbidity mixing zone is intended for brief periods of time (such as a few hours or days) and is not an authorization to exceed the turbidity standard for the entire duration of the construction. Use of the mixing zone is subject to the constraints of WAC 173-201A-100(4) and (6), requiring an applicant have supporting information that indicates the use of the mixing zone shall not result in the loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses of the water body, result in damage to the ecosystem, or adversely affect public health. The mixing zone is authorized only after the activity has received all other necessary local and state permits and approvals, and after the implementation of appropriate best management practices to avoid or minimize disturbance of in-place sediments and exceedances of the turbidity criteria. Within the mixing zone, the turbidity standard is waived, and all other applicable water quality standards shall remain in effect. The mixing zone is defined as follows:

- 1) For waters up to 10 cfs flow at time of construction, the point of compliance shall be 100-feet downstream of project activities.
 - 2) For waters above 10 cfs up to 100 cfs flow at time of construction, the point of compliance shall be 200-feet downstream of project activities.
 - 3) For waters above 100 cfs flow at the time of construction, the point of compliance shall be 300 feet downstream of project activities.
 - 4) For projects working within or along lakes, ponds, wetlands, estuaries, marine waters or other non-flowing waters, the point of compliance shall be at a radius of 150-feet from the activity causing the turbidity exceedance.
5. In all cases, the project will be designed to avoid and minimize impacts to waters of the state.
 - 5a. There shall be no visible sheen from petroleum products in the receiving water as a result of project activities.
 - 5b. Work in or near the waterway shall be done so as to minimize turbidity, erosion, other water quality impacts, and stream bed deformation.
 - 5c. All construction debris and excess sediment shall be properly managed and disposed of so as to prevent it from entering the waterway or cause water quality degradation to state waters.
6. **Concrete** - All concrete shall be poured in the dry, or within confined waters not being dewatered to surface waters, and shall be allowed to cure a minimum of seven (7) days before contact with water. The waters of the state shall not come in contact with the concrete structure while the concrete is curing. Fresh, uncured concrete in direct contact with the water is toxic to aquatic life. Any dewatering required from a contained area with curing concrete shall be discharged to land with no possible entry to surface waters. If the project occurs in a location that has a municipal sanitary sewer system and no land available for biofiltration, discharge shall be to the sanitary sewer. Contact the local sewer authority prior to discharge.
7. **Erosion Control**
 - 7a. All areas disturbed or newly created by the project construction shall be stabilized as soon as possible to prevent erosion and shall comply with the Temporary Erosion and Sediment Control Plan (TESC).
 - 7b. All erosion control and storm water measures shall meet or exceed WSDOT's Highway Runoff Manual and DOT's approved Stormwater Site Plan (SSP).
 - 7c. Periodic inspection and maintenance of all erosion control structures shall be conducted no less than every 7 days. Additional inspections shall be conducted prior to and after expected rainfall events to ensure erosion control measures are in working conditions. Any damaged structures shall be immediately repaired. If it is

determined at the inspection that additional measures are needed to control storm water and erosion, they shall be implemented immediately.

8. HAZARDOUS SPILL PREVENTION AND CONTROL

- 8a. No petroleum products, fresh cement, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state.
- 8b. Equipment that enters the state's waters shall be maintained to prevent any visible sheen from petroleum products from appearing on the water.
- 8c. The discharge of oil, fuel or chemicals to waters of the state, or onto land with a potential for entry into state waters, is prohibited.
- 8d. No emulsifiers or dispersants are to be used in waters of the state without written approval from the Department of Ecology, Regional Office.
- 8e. No cleaning solvents or chemicals utilized for tool or equipment cleaning may be discharged to the ground or to waters of the state.
- 8f. All oil, fuel or chemical storage tanks or containers shall be diked and located on impervious surfaces so as to prevent spills from escaping to surface waters or ground waters of the state. Waste liquids shall be stored under cover, such as tarpaulins or roofs.
- 8g. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters. Proper security shall be maintained to prevent vandalism.
- 8h. Concentrated waste or spilled chemicals shall be transported off site for disposal at a facility approved by the Department of Ecology or appropriate County Health Department. These materials shall not be discharged to any sewer without approval of the local sewer authority.

9. SPILL REPORTING

- 9a. Spills into state waters, spills onto land with a potential for entry into state waters, or other significant water quality impacts such as distressed or dead fish noticed in the project vicinity, shall be reported immediately to the Ecology Regional Office in the region where the project is taking place. Containment and clean-up efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Clean-up shall include proper disposal of any spilled material and used clean-up materials.

9b. Paint and solvent spills shall be treated as oil spills and shall be prevented from reaching storm drains and subsequent discharge into the water. Any such spill shall be reported to the Ecology Regional Office immediately.

9c. Department of Ecology Regional Office 24 hour telephone reporting numbers.

Central Region (509) 575-2490

Eastern Region (509) 456-2926

Northwest Region (425) 649-7000

Southwest Region (360) 407-6300

9d. In case of fish kills the local Habitat Biologists with the Department of Fish and Wildlife shall be called. If the Habitat Biologists can not be contacted call (360) 902-2534.

ACTIVITY SPECIFIC CONDITIONS

WSDOT shall comply with the following specific conditions that apply to the activity that is being conducted. The general and specific conditions shall be located on site during construction. In the absence of new technology, techniques, or development of new Best Management Practices, the methods set forth in the Agreement shall be utilized.

I. MAINTENANCE ACTIVITIES

A. Beaver Dam Removal

1. WSDOT shall comply with conditions outlined in the most current WDFW *Provisions for a General Beaver Dam Removal Hydraulic Project Approval*.

B. Ferry System Maintenance Pile Driving and Removal

1. WSDOT shall comply with conditions outlined in the most current WDFW HPA for *Removal or Driving of 8 or Fewer Piles for Marine Waters*.

C. Highway Bridge and Ferry Terminal Transfer Span Cleaning and Painting Activities

Best Management Practices (BMP's) or other mitigation measures shall be used to contain and control abrasive material, for proper storage and use of chemicals and paint, for oil, paint and chemical spill prevention and control, and for clean-up of supplies and other solid wastes. The following are minimum BMP's expected to be utilized on site.

1. Bridge Washing/Cleaning:

1a. Paved surfaces: The paved surface of the bridge shall be dry cleaned of debris accumulations prior to fresh water flushing. Flushing will involve the use of clean water only, to prevent detergents or other cleaning agents from entering waters of the state.

1b. Structural cleaning: Pressure washing of structures shall be done using appropriate screened tarping to control and contain paint particles generated by the activity. Concentrated accumulations of bird feces and nests shall not be allowed to drop into the water. This material shall be scraped from the bridge structure, collected and disposed of at an appropriate upland location.

1c. Pressure washing of concrete structures shall be held to the minimum necessary to maintain structure integrity. Pressure washing of concrete structures can result in an increased pH discharge with a potential to violate state water quality criteria.

2. Tarps shall be used to control and contain abrasive grit and dusts to prevent spent abrasive grit and dusts from reaching state waters. Spent abrasive grit shall be disposed at an appropriate upland location.
3. Periodic inspection and maintenance of all control measures must be provided.
4. Debris accumulations on the bridge, road surface, and within the bridge drains, such as rust, dirt, sand, dust, paint residue and grease shall be collected or swept up and properly disposed of off site. Additional material remaining in the drains after all efforts at hand removal have been attempted, may be flushed with clean, fresh water.
5. Painters shall work from pails containing a maximum of two (2) gallons of paint to minimize the impact of accidental spillage.
6. No cleaning solvents or chemicals utilized for tool or equipment cleaning may be discharged to the ground or water. Cleaning of painting and maintenance equipment shall not be done in state waters nor shall resultant cleaning runoff be allowed to enter state waters. No paint cans, lids, brushes, or other debris shall be allowed to enter state waters.
7. All liquid products shall be stored and mixed on impervious surfaces in a secure covered and contained location to eliminate the potential for spills into state waters.
8. Drip pans or other protective devices shall be required for all paint mixing and solvent transfer operations.
9. Drip tarps shall be suspended below paint platforms to prevent spilled paint, buckets, brushes, etc., from being lost to state waters.
10. Paint and solvent spills shall be treated as oil spills and shall be prevented from reaching storm drains and subsequent discharge into the water. Any such spill shall be reported to the appropriate Ecology Regional Office immediately.
11. The Engineer shall be on site or on call, and be readily accessible to the site at all times while cleaning and painting activities are occurring that may affect the quality of surface water of the state.
12. The Engineer shall have adequate authority to ensure proper implementation of the Pollution Control Plan for Bridge Maintenance and Painting, as well as immediate corrective actions necessary because of changing field conditions.

D. Bridge Pier, Structure, Bridge Protection Device, Stream Bank and Roadway Protection Maintenance and Repair

1. When removing and repairing existing structures, including shear booms, all demolition and construction material shall be removed from the water and disposed of properly in an

upland site. During demolition, materials shall not be stored where high tides, wave action, or upland runoff can cause the materials to enter into the water.

2. When replacing the structure Ecology recommends the use of non-treated or recycled materials. WDFW does not allow the use of creosote or pentachlorophenol treated wood in lakes (WAC 220-110-060(4)). If creosote treated or other protective material is allowed for rivers or marine waters, it shall be completely dry before use in or near the waterway to minimize leaching to the water or bed. WSDOT shall comply with the requirements for the use of treated wood in the HPA. Please refer to the Memorandum of Agreement between WDFW and Ecology regarding use of treated wood in aquatic areas.
3. Material used to construct road approaches to access the project site shall be of clean composition and placed in a manner to prevent erosion and siltation that might result from high water and/or heavy rains. The approach area shall be stabilized and planted to meet WDFW and local requirements upon completion of the project.
4. Riprap shall be clean and durable, free from dirt, sand, clay, and rock fines. Riprap placed to repair flood or other erosion caused damage shall be placed using equipment. End dumping of clean riprap from the bridge deck into the work zone is allowed only if other means of transport to the work zone would be more intrusive on the environment.
5. Unless authorized by WDFW, heavy equipment shall not enter any waterbody, and shall be operated as far from the waters edge as possible. If allowed by WDFW, the Ecology authorized turbidity dilution zone shall be met, and no visible sheen of oil shall be allowed. Impacts to bank and shoreline vegetation shall be limited to the maximum extent possible. Areas damaged by equipment or by placing of approach materials shall be stabilized or replanted where destroyed or damaged by equipment used in the repair work.
6. Stream bank and roadway protection projects should evaluate the use of bioengineering techniques. Please consult with the local WDFW Habitat Biologist.

E. Debris Removal from Bridge Piers, Piles, Braces and Abutments

1. All debris removed from the bridge shall be properly stored far enough on the bank so as not to enter the waterway or cause water quality degradation to state waters.
2. WSDOT shall consult with WDFW, local governments, or the Natural Resource Conservation Service for ideas on beneficial uses of any large woody debris material prior to disposal of such material. Large woody debris is defined as trees or tree parts larger than four inches in diameter and longer than six feet and rootwads. Large woody debris may be specifically authorized by WDFW to be left in the stream below the bridge.
3. Bank vegetation shall be protected during removal and storage of debris material. If vegetation is destroyed, the bank shall be immediately replanted upon completion of debris removal.

4. When removing material, equipment shall operate from the bridge or bank. Unless authorized by WDFW, no heavy equipment shall enter the flowing water. If allowed by WDFW, the Ecology authorized turbidity dilution zones shall be met, and no visible sheen of oil shall be allowed.

F. Ditch, Stream and Culvert Cleaning and Maintenance

1. Stream Channel Cleaning
 - 1a. For areas where gravel bar removal is required, no equipment shall be allowed to enter the water unless access to the gravel bar through the water is authorized by WDFW.
 - 1b. All requirements of the WDFW HPA shall be followed.
 - 1c. No gravel processing (sorting, screening, or crushing) or other industrial activities (hot mix asphalt plant or concrete batch plant) that would require coverage under the NPDES Sand and Gravel General Permit is permitted on the gravel bar.
2. Ditch and culvert cleaning activities shall take place when the ditch or culvert does not contain water whenever possible. If the ditch or culvert has flowing water that discharges to surface waters of the state at the time of the cleaning activity, temporary sediment traps shall be used to control turbid water created by the activity. Placement of a series of small reusable structures along the ditch line can successfully control turbidity created by the activity.
3. Disturbance to bank and wetland vegetation adjacent to the ditch shall be held to a minimum.
4. All material excavated from roadside ditches or streams shall be completely removed and disposed of at an upland location. No material shall be side cast into adjacent wetlands or other waters of the state, unless authorized by WDFW for stream habitat improvement.
5. If material is placed on the upland to dewater, it shall be contained or placed in such a way that the runoff will not flow into nearby storm drains, or waterbodies, including wetlands occurring adjacent to the ditch. Any flow of slurry water shall be controlled to reduce suspended sediment levels prior to discharge back into any adjacent waterbody. This return water shall not exceed the standards.

G. Ferry Sacrificial Structures, Wing Walls, Dolphins

1. When removing and repairing existing structures, all demolition and construction material shall be removed from the water and disposed of properly in an upland site.

During demolition, materials shall not be stored where high tides, wave action, or upland runoff can cause the materials to enter the water.

2. When replacing the structure Ecology recommends the use of steel, concrete, plastic or recycled materials. If creosote treated or other protective material is allowed for the waterbody in which the project is taking place, it shall be completely dry before use in or near the waterway. Please refer to the Memorandum of Agreement (MOA) between WDFW and Ecology regarding use of treated wood in aquatic areas. WSDOT shall comply with the requirements for the use of treated wood in the HPA and the MOA.
3. Every attempt shall be made to reduce shading impacts when replacing structures over vegetated areas.
4. Unless authorized by WDFW, heavy equipment shall not enter the waterbody, and shall be operated as far from the water's edge as possible. If allowed by WDFW, the Ecology authorized turbidity dilution zone shall be met, and no visible sheen of oil shall be allowed. Impacts to bank and shoreline vegetation shall be limited to the maximum extent possible, and immediately replanted where destroyed or damaged by equipment used in the repair work.
5. If sacrificial structures are being replaced in an area of contaminated sediments, Ecology's Sediment Management Section shall be contacted prior to starting work to determine if sediment cleanup will be required. Any new structures shall not foreclose future cleanup options, and WSDOT shall be responsible for additional costs incurred by such structures to the extent future cleanup is inhibited by such structures.

H. Maintenance and Relocation of Navigation Buoys

1. Every effort shall be made to minimize disturbance of bottom sediments when placing the buoys.
2. In contaminated sediment sites, a work barge shall be used to move the buoys. The buoys shall not be relocated by dragging along the bottom of a site with contaminated sediments.
3. Cleaning of buoys shall be done by spraying with clean water. No chemicals or solvents shall be used when cleaning buoys over the water. If buoys are removed for cleaning, all solvent or chemicals used for cleaning shall be completely removed from the buoys prior to returning to the water to prevent discharges of chemicals to state waters.
4. Painting of buoys shall be done in the uplands in a contained area to prevent paint, paint chips, or abrasive blasting materials from entering state waters or adjacent storm drains.

I. Maintenance of Storm Water Control and Treatment Structures

1. Cleaning of storm water conveyance systems (catch basins, piping, vaults, detention/retention ponds) by use of vacuum or eductor systems shall be performed to minimize discharge of turbid water. Accumulated sediments from vacuum or eductor cleaning operations shall be disposed at appropriate locations. Decanting of the liquid portion of vacuum wastes in the field shall be handled in the following manner:
 - a). Decant water shall be disposed to municipal decant stations and/or sanitary sewers where WSDOT has approval to use.
 - b). In cases where approval to use municipal facilities has not been granted, WSDOT shall meet Condition G10 of the NPDES stormwater permit. Decant from street waste vehicles resulting from cleaning stormwater facilities may be reintroduced only when other practical means are not available and only to catch basins remote from the discharge point to waters of the state. Other practical means to consider include allowing the material to settle for a minimum of 30 minutes prior to discharge to either the ground with no discharge to surface water, or discharge upstream of a regional detention pond.

When discharging to catch basins, WSDOT shall meet all other treatment and handling conditions in the NPDES stormwater permit, the Highway Runoff Manual, and the WSDOT's Stormwater Management Plan.

- c). WSDOT shall adopt a strategy and schedule for meeting new policies when issued by Ecology's Stormwater Section.
2. Cleaning of storm water treatment ponds or swales shall be performed when there is not a possibility of a discharge from the pond for at least 24 hours.
3. If upon inspection of a stormwater facility, the water in the catch basin appears excessively oily, exhibits an unusual color or odor, or if staining or corrosion is observed, illicit dumping may be the cause and the catch basin or vault shall not be disposed or discharged until a characterization of the water can be performed to determine the presence of toxic or hazardous contaminants. If these conditions are observed during wet weather, the material may need to be removed and stored for characterization to prevent a discharge and degradation of waters of the state. During dry weather, removal of the potentially contaminated material is less urgent, and it may be practical to wait until the material is tested. Proper disposal options will be determined based on the characterization.

If there is a likely source of contamination nearby that may be causing any observed problems, please contact the appropriate Ecology Regional Office to report the information to the Environmental Report Tracking System.

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 4. If material is placed on the upland to dewater, it shall be contained or placed in such a way that the runoff will not flow directly into adjacent storm drains, or waterbodies, including wetlands occurring adjacent to the ditch. Any flow of slurry water shall be controlled to reduce suspended sediment levels prior to discharging back into any

adjacent waterbody. This return water shall not exceed the standards as stated in General Condition 4 of this Agreement.

II.

NEW CONSTRUCTION

Roadway and Bridge Construction Projects

This section applies to projects that have components that entail work in the water for roadway construction. These activities include at a minimum, both new roadway and improvements, stream bank stabilization including stream flow control groins, compliance or re-routing of existing streams, and bridge construction for those portions of work occurring in and over the water.

A. General

For new construction projects requiring a Corps of Engineers 404 Permit, WSDOT shall notify Department of Ecology, Federal Permits Unit in the SEA Program through submittal of the Joint Aquatic Resource Permit Application (JARPA). This notification shall be made no less than three (3) months prior to the commencement of project construction. The Department of Transportation is encouraged to contact the appropriate Regional Office of the Department of Ecology at any time to discuss proposed project activities and requests for technical assistance on appropriate BMPs.

B. Construction

1. WSDOT and the construction contractor shall use all reasonable measures to assure the construction activity will be in compliance with the Standards. Water quality constituents of particular concern are turbidity, suspended sediment, settleable solids, oil and grease, and pH.
2. **Erosion Control**
 - a. All projects that require the implementation of a Stormwater Site Plan or Temporary Erosion and Sediment Control Plan as described in the WSDOT Highway Runoff Manual shall be covered by the conditions in those documents.
 - b. For projects not covered by the above situations, the following minimum conditions for erosion and sediment control shall apply:
 - 1) All exposed and unworked soils shall be stabilized by suitable and timely application of BMP's.
 - 2) Adjacent and downstream properties shall be protected from sediment deposition from wind or water action.
 - 3) All sediment control devices including sediment ponds, perimeter silt fencing, and other sediment trapping BMP's shall be installed before grading.

- 4) All temporary conveyance channels and pipe outlets shall be stabilized to prevent erosion.
 - 5) All storm drain inlets that receive flow from the project shall be protected from sediment.
 - 6) All construction access routes that are subject to water or wind erosion shall be stabilized.
 - 7) All temporary and permanent erosion control BMP's shall be maintained and repaired as needed to assure continued performance of their intended function.
 - 8) All temporary BMP's and accumulated sediments shall be removed or stabilized immediately after final site stabilization.
3. If demolition of a concrete bridge or other structure is part of the project, WSDOT shall follow any requirements contained in the HPA for dealing with large concrete pieces. If the method of taking the bridge apart is to saw-cut portions off, tarping is required to control and contain all saw-cut water. The saw-cut water shall be disposed of on land with no possibility of entry to surface waters.
 4. Under no circumstances shall free fall dumping of fill material occur in or next to any water body unless control structures are in place to prevent sediment from directly entering the waterbody.
 5. The natural flow of any affected waterbody shall be diverted around the construction site unless written approval to work in the flowing water is obtained from WDFW. If allowed by WDFW, the Ecology authorized turbidity dilution zone shall be met, and no visible sheen of oil shall be allowed. Diversion may entail tightlining, coffer dams, or equivalent structures. The stream diversion system shall be designed and operated so as to not cause erosion or scour in the stream channel or banks of the waterbody.
 6. If using a diversion system, temporary sediment traps shall be cleaned out and the settled sediments removed from the stream channel before removing the stream diversion system and returning the stream to its natural channel. Settled sediments shall not be allowed to enter the stream due to water or run off flows that may occur after construction is completed.
 7. Clean dewatering water may be discharged directly to waters of the state. Any discharge outfall utilized shall be designed and operated so as to not cause erosion or scour in the stream channel or banks.
 8. Turbid water generated from construction activities, including turbid dewatering water, shall not be discharged directly to waters of the state. Temporary sediment traps shall be used to allow the turbid water to settle for a minimum of two hours before discharge. The flow rate of turbid water into the stream shall not exceed one-tenth of the natural flow rate of the stream at the time of discharge.

If measures are developed to bring the turbidity levels of the discharge into compliance with Standards with less than the required detention time, WSDOT may implement such measures after testing to confirm the method will work.

9. All lumber treated with creosote or other protective material shall be completely dry before use in or near the waterway. If creosote treated or other protective material is allowed for the waterbody in which the project is taking place, it shall be completely dry before use in or near the waterway. WSDOT shall comply with the requirements for the use of treated wood in the HPA. Please refer to the Memorandum of Agreement between WDFW and Ecology regarding use of treated wood in aquatic areas.
10. Material used to construct road approaches to the site shall be of clean composition and placed in a manner to prevent erosion and siltation that might result from high water and/or heavy rains.
11. Impacts to bank and shoreline vegetation shall be limited to the maximum extent possible, and replanted immediately where destroyed or damaged.
12. Unless authorized by WDFW, heavy equipment shall not enter the waterbody, and shall be operated as far from the waters edge as possible. If allowed by WDFW, the Ecology authorized turbidity dilution zone shall be met, and no visible sheen of oil shall be allowed.
13. A separate area shall be set aside, that does not have any possibility of draining to surface waters, for the wash out of concrete delivery trucks, pumping equipment, and tools.
14. Construction Pollution Control Inspection -- The Engineer shall be made available to supervise implementation of the Erosion and Sediment Control Plan, and construction practices.
 - 14a. The Engineer shall be on call and available to be on site during heavy rainfall, and at all times while construction activities are occurring that may affect the quality of ground or surface waters of the state, especially during heavy rain conditions.
 - 14B. The Engineer shall have adequate authority to ensure proper implementation of the Erosion and Sediment Control Plan, as well as immediate corrective actions necessary because of changing field conditions. If the Engineer issues agreements or change orders necessary to implement a portion of the pollution control plan or to prevent pollution to the waters of the state, all personnel on site, including the construction contractor and the contractor's employees, shall immediately comply with this agreement or change order.

APPENDIX B

Summary of Geotechnical Conditions

SUMMARY OF GEOTECHNICAL CONDITIONS

SR-16, UNION TO JACKSON

GENERAL INFORMATION

Project Soil Conditions

The soil conditions throughout the project area are generally glacial in origin. Glacial till consisting of a poorly sorted mixture of gravel, sand, silt, and clay is present throughout much of the project limits. Also present are outwash materials which are characterized by being relatively clean mixtures of gravel and sand with generally less than 15% silt and clay (fines) and at times less than 5% fines. In general, the till has been glacially consolidated to a very dense condition. The outwash has been glacially consolidated in some locations to a very dense state. In some locations, the outwash is loose to dense. Complicating the site, was the practice of using onsite materials for fill when SR-16 was constructed. Most of the fill and embankments are constructed from Till or Outwash. Where these materials were used, they vary from loose to dense depending on the compactive effort applied. Materially, they are indistinguishable from the insitu materials they were derived from. All of these materials, being glacially derived, are known to contain cobbles and boulders. The Contractor should review the boring logs and geotechnical reports for each project element being constructed.

Ground and Surface Water

Surface water is conveyed in roadside ditches and in drainage systems throughout the project area. Surface water is present at several locations; the most notable is Snake Lake. Groundwater was encountered in the field exploration borings at various elevations suggesting that there are several water tables present throughout the project area. Groundwater measurements of piezometers throughout the project area indicate that ground water can fluctuate by ten feet or more in response to precipitation events and seasonal changes. The borings also encountered perched water at changes in material type, where looser surface soils are underlain by very dense soils, or where siltier soils underlie soils with lower fines content. The outwash discussed above and the fills present within the project limit commonly have perched water at material boundaries. The boring logs and geotechnical reports discuss the groundwater in more detail.

Roadway and Structure Excavation

Roadway and structure excavation will encounter glacial till, outwash, and fill materials. The till and fill derived from the till, having a higher percentage of fines, is moisture sensitive and drains poorly. Exposure to precipitation and surface water will cause these materials to degrade and become unsuitable. The contractor will have to protect excavations in these materials from becoming wet and saturated. Excavations that are allowed to pond water will likely require the removal and replacement of materials to re-establish suitable bearing materials. The contractor may need to limit excavation exposure or protect excavations from precipitation to maintain stable soil conditions. Till and fill that is excavated and planned for use elsewhere on the job as fill, may be above optimum

1 moisture content and depending upon the season and recent precipitation may require
2 aeration or wasting.

3 The outwash materials and fills derived from outwash, having less fines than till, are more
4 likely to be water bearing and they are prone to disturbance and caving. Perched water will
5 likely be encountered where tills underlie outwash and outwash fill materials. The perched
6 water will likely cause erosion, sloughing, and caving within these materials and will provide
7 a source of water to cause degradation of the underling till materials if the water is not
8 collected and removed. The contractor may need to utilize sumps and pumps to capture
9 and remove perched water from excavations to maintain stability and suitability of the site
10 soils. Stockpiles of onsite materials will need to be protected from precipitation.

11 The following table lists the test holes depicting the subsurface conditions and groundwater
12 elevations in the Roadway Excavation areas. Additional boring information is available for
13 the major structures, and is discussed in more detail in the sections below.

Line	Test holes depicting the subsurface conditions	Groundwater Encountered	Groundwater Elevation (ft)
A22	A1-03 to A4-03	None	-
CES	CES-1-03 & CES-2-03	CES-2-03	302
CSE	CSE-1-03 to CSE-4-03	CSE-1-03, CSE-2-03 & CSE-4-03	328, 292, & 298
OWS	OWS-1-03 & OWS-2-03	OWS-1-03	305, 295
PED2	OEN-1-03 to OEN-3-03	All	331 to 337
PED3	6SNW-1-03 TO 6SNW-3-03	None	-
BP2	BP-3-04	BP-3-04	334
19NW	19NW-1-03	19NW-1-03	324

14 In the cut area of CES Line from station 16+00 to station 18+00, test boring CES-1-03
15 encountered silty sand with gravel, wood chunks and organic (relic top soil) soils. This soil
16 will not be suitable for use as embankment fill and should be wasted or used as topsoil.

17 **Temporary Slopes and Temporary Shoring**

18 Many of the structures for this project may need to utilize temporary slopes or shoring to
19 provide access or to protect adjacent structures or utilities. Temporary slopes and shoring
20 are generally the responsibility of the contractor. The contractor should review the boring
21 logs to assess site soil conditions where temporary slopes or shoring may be needed. The
22 site soil conditions may affect the contractor's selection or determination as to the
23 appropriate means of providing stable excavations. The fill that is present varies from
24 loose to dense and may require the use of flat excavation slopes. In most locations, the
25 loose fill is underlain by very dense soil conditions that will make the use of cantilever sheet
26 pile systems impractical, as they likely will not penetrate the dense soils sufficiently to
27 develop the necessary resistance to cantilever. In such cases, bracing may be needed or a
28 soldier pile/lagging system may be required. Depending on the shoring height, tiebacks
29 may be required.

1 Drilling to install soldier piles or tiebacks will be difficult due to very dense soil conditions
2 and the likely presence of cobbles and boulders. Caving and sloughing will likely occur in
3 the fill and within the outwash where it is encountered. Temporary casing or slurry may be
4 required to maintain hole stability. Perched water will likely be encountered at changes in
5 material type. Depending on the time of year and the quantity of water encountered, wet
6 construction methods may be needed for soldier piles to maintain stability of the soldier pile
7 excavation.

8

BRIDGES

6th Aveune Overcrossing (Bridge 16/30)

Subsurface Conditions

Medium dense to very dense embankment fill consisting of silty sand with gravel and poorly graded sand with gravel is present from atop the existing embankments near the locations of the proposed abutments, to about 5 ft below the elevation of 6th Avenue. Immediately below the embankment fill is a 13 ft thick, very loose to medium dense layer of silty sand with gravel. This layer terminates at approximately elevation 325 feet. The layer is looser under the south abutment. Organic material was reported in the top 10 - 12 ft of this layer in borings H-1-80 and H-3-80. Construction records for Bridge 16/30 state that waste material, including tree stumps, concrete I-beams and food packaging, were removed from this layer. Hence, portions of this layer may contain various waste materials.

Glacial till underlies the loose silty sand layer. The till consists of silty sand with gravel, and it ranged from dense to very dense. The till occurs below an elevation of about 325 ft, and extends to the minimum elevation of the exploratory borings, about 290 feet.

Ground and Surface Water

During subsurface exploration for the 6th Ave. O-xing, groundwater was reported to occur near the interface of the embankment fill and the loose to medium dense silty sand with gravel. Since rainfall during the period preceding the drilling was relatively light, this may not represent the highest possible water table that may be expected at this site. Seepage has been observed at the toe of the embankment on the northeast side of the existing bridge.

Drilled Shaft Foundations

Since the areal extent of the waste material was not indicated in the records, the contractor should anticipate its occurrence in, and be prepared to remove such material from the shaft excavations.

Permanent casing is required for structural reasons above an elevation of 320 feet. At the intermediate piers, the permanent casing will extend above the construction joint to the ground surface. Due to the groundwater encountered during the field exploration, wet construction should be anticipated.

The excavations for shaft caps will be near the footings of the existing bridge. Shoring will be needed to prevent deformation of the existing footings.

Pearl Street Overcrossing Widening (Bridge 16/31)

Site and Subsurface Conditions

At Piers 1 and 4, the fill consists of loose to dense silty sand with gravel. At Pier 2, the fill consists of medium dense, silty gravel. At Pier 3, the fill consists of loose, well graded gravel to well graded gravel with silt. Fill was generally present above an elevation of 350 feet.

1 Below the fill is native soil, which consists of a medium dense to very dense, silty sand with
2 gravel, and layers of very dense, poorly graded, sand with silt and gravel and medium
3 dense to very dense, sandy silt.

4 Groundwater was encountered at an elevation of 329 ft in boring H-3-01 during drilling in
5 October 2001.

6 **Potential Impact of Site Conditions on Construction**

7 The contractor should anticipate difficult driving condition for sheet pile shoring due to
8 dense soil conditions and the presence of gravel and cobbles. The presence of boulders
9 should also be anticipated. See the structure excavation section above for more
10 information.

11 **SR-16, Snake Lake Bridges Widening**

12 **Site and Subsurface Conditions**

13 The approaches of the existing bridges consist of approximately 20 ft of fill. The upper soil
14 at the proposed locations of the intermediate piers of both bridges is an alluvial deposit that
15 consists of a very soft, brown, PEAT. The thickness of the peat varies between 5 to 10 ft at
16 Piers 2 and 3 of the structures. An alluvial deposit, which consists of loose, poorly graded
17 SAND with silt and gravel (SP-SM) grading to medium dense silty SAND with gravel, was
18 present between elevations 293 ft and 287 ft at Pier 2, and between elevations 299 ft and
19 285 ft at Pier 3 of both bridges. A stiff to very stiff sandy silty CLAY (CL-ML) layer was
20 found in boring H-1-03 between elevations 287 ft and 277 ft. The predominant soil unit
21 that was present throughout the area is a glacially deposited unit. This unit consists of a
22 dense to very dense, poorly graded SAND with silt and gravel (SP-SM) and silty SAND with
23 gravel (SM). This unit is present throughout the project area in the lower portion of all
24 borings.

25 Groundwater was encountered at an elevation of 301 ft in borings H-1-03 and H-2-03
26 during drilling in February 2003. Groundwater was also encountered at approximate
27 elevations of 297 ft and 300 ft in borings C-14-71 and J-7-71 during drilling in September
28 1971.

29 **Potential Impact of Site Conditions on Construction**

30 The potential for caving soil should be anticipated in the spread footing excavation and in
31 all drilled shaft excavations throughout the depth of the shafts due to the presence of clean
32 granular soil and a high water table. Wet construction methods should be used for shafts.
33 Zones within the soil units identified in this report are coarse and poorly graded, and
34 currently approved polymer slurries may not be fully effective to prevent caving within these
35 zones.

36 **CES Line Bridge**

37 **Site and Subsurface Conditions**

38 Topsoil consisting of very loose silty sand with gravel was encountered near the west
39 abutment of the proposed bridge. The thickness was approximately 5 feet. The topsoil

1 was overlying glacially deposited medium dense to very dense silty sand with gravel and
2 poorly graded sand with silt and gravel which is also present at all other piers.
3 Perched groundwater was encountered at elevation of 300 feet and at elevation 260 feet in
4 borings CES-2-03 and CES-6-03 during drilling in July 2003.

5 **Potential Impact of Site Conditions on Construction**

6 We anticipate very loose soils to be encountered in the vicinity of the Pier 3 foundation
7 location. Due the high organic content of this layer, it must be over excavated. The integrity
8 of utility lines in the area must be maintained. Shoring may be required.

9 **12th Street Over Crossing Bridge Widening, Bridge #16/24E**

10 **Site and Subsurface Conditions**

11 The subsurface consists of an interbedded sequence of sand and gravel layers with varying
12 amounts of silt overlying stiff silt. Boring logs TH-1-03 and TH-2-03 depict the subsurface
13 conditions. No groundwater was encountered in the borings.

14 **Potential Impact on Spread Footing Construction**

15 Dense to very dense silty sand with gravel to poorly graded sand with silt and gravel is
16 anticipated at the proposed elevation of all of the spread footings. Temporary slopes,
17 shoring, or combination of both may be needed to construct the footings, as discussed
18 above.

RETAINING WALLS AND TUNNELS

6PL Wall 1

Site and Subsurface Conditions

The subsurface consists of 30 to 40 feet of loose to medium dense silty sand and gravel and interbedded layers of poorly graded sand with silt and gravel. This layer becomes dense to very dense at approximately elevation 339 feet. Boring logs PL-1-03 and PL-2-03 depict the subsurface conditions.

Groundwater

Perched groundwater was encountered in both of the test holes at elevations of 345 and 340 feet at the time of drilling, in September 2003. A piezometer was installed in test hole PL-2-03, at an approximate elevation of 372 to 338.5 feet. The last reading was recorded on March 1, 2004, and it shows groundwater at an approximate elevation of 340.7 feet. The proposed bottom of the wall is at an approximate location of 342 feet, near the recorded water level.

Potential Impact on 6PL Wall 1 Construction

Excavations will be up to approximately 30 feet deep. Temporary slopes will be required. Loose to medium dense soils with possible cobbles and boulders will be encountered during the construction of the wall. Dense to very dense soils may be encountered at the bottom of the wall as well. These dense to very dense soils will make excavation and shoring difficult as discussed above. Although perched groundwater was encountered below the bottom of the wall, the contractor should be prepared to deal with groundwater as the measured groundwater elevation is very close to the planned foundation elevation.

PED Wall 1

Site and Subsurface Conditions

The subsurface consists of 10 to 30 feet of medium dense to very dense silty sand and gravel with a very loose to loose interbedded layer of silty sand with gravel. The interbedded layer has a thickness of 5 to 10 feet. Boring logs PEDW-1-03 through PEDW-3-03 depict the subsurface conditions.

Groundwater

Perched groundwater was encountered in test hole PEDW-2-03 at an approximate elevation of 297 feet at the time of the drilling in August 2003.

Potential Impact on PED Wall 1 Construction

Excavation of up to 17 feet will be needed to accommodate the wall footing. Temporary slopes will be needed. Medium dense to very dense soils will be encountered with interbedded layers that are very loose to loose. Maintaining a stable excavation may be difficult without shoring.

1 19th Street Bicycle Tunnel and Retaining Walls

2 Site and subsurface conditions

3 Medium dense to very dense soils containing gravel were encountered in the field
4 exploration. The soils were predominantly silty sand with gravel to poorly graded sand with
5 silt and gravel. Boring logs 19ST-1-03 to 19ST-5-03 depict the subsurface conditions.

6 Seepage from perched groundwater is anticipated at various depths between elevations
7 330 to 335 feet. The seepage is expected to be moderate, and the contractor should be
8 prepared and equipped to dewater excavations.

9 Potential Impact on Tunnel and Retaining Wall Construction

10 Due the presence of groundwater, wet construction methods for the soldier piles may be
11 required. Temporary casing and/or slurry may be required to maintain sidewall stability in
12 soldier pile excavations.

13 A22 Line Noise Walls 1 & 5, and 6SN Wall 1

14 Site and subsurface conditions

15 The subsurface soils are loose to very dense, consisting of varying thickness of sand and
16 gravel layers with varying amounts of silt.

17 For the *A22 Line Noise Wall 1 & 5*, boring logs A-9-03 through A-15-03 show the
18 subsurface conditions. Perched groundwater was encountered in boring A-10-03 at an
19 elevation of 329 feet, at the time of drilling July 2003. The observed groundwater elevation
20 is much lower than the proposed bottom of the wall.

21 For the *6SN Wall 1*, boring logs 6SNW-1-03 through 6SNW-7-03 show the subsurface
22 conditions, and no groundwater was encountered within the limits of the test holes.

23 Potential Impact on Noise Wall Construction

24 The noise walls will be constructed in loose to medium dense soils. However dense to very
25 dense soil conditions may be encountered in the foundation excavations. The dense soils
26 may make the excavation difficult.

27 The loose sandy gravels will be prone to caving and sloughing. Relatively flat temporary
28 excavation slopes, shoring, or trench boxes may be required. Gravel and cobbles at the
29 proposed elevation of the wall footings may make excavation and shoring difficult. Below
30 the looser sand and gravel dense to very dense materials with possible boulders may be
31 encountered. The use of driven shoring systems may be difficult.

32 CES Wall 1 &2 & CSE Wall 1

33 Site and Subsurface Conditions

34 The subsurface soils are medium dense to very dense, containing layers of varying
35 thickness comprised of sand and gravel with varying amounts of silt.

CES Wall 1, boring logs CES-1-03 and CES-2-03 depict the subsurface conditions. Perched groundwater was encountered in test hole CES-2-03 at elevation 301 feet, at the time of drilling, in July 2003. The observed groundwater elevation is much lower than the proposed bottom of the wall elevation.

CES Wall 2, boring logs CES-3-03 and CES-4-03 depict the subsurface conditions. No perched groundwater was encountered in either of the test holes at the time of drilling in July 2003.

CSE Wall 1, boring logs CSE-3-03 and CSE-4-03 depict the subsurface conditions. Perched groundwater was encountered in test hole CSE-4-03 at elevation 298 feet, at the time of drilling, in July 2003. The observed groundwater elevation is much lower than the proposed bottom of the wall elevation.

Potential Impact on Retaining Wall Construction

We expect to find, predominantly, medium dense to very dense silty sand with gravel to poorly graded sand with silt and gravel at the proposed bottom of wall elevation. See the structure excavation section above for more information.

MLS Wall 1

Subsurface Conditions

This wall is to be a cantilever soldier pile wall that will be essentially buttressing an existing rock wall. The rock wall has been placed in fill that supports a new credit union building. The fill is medium dense sand with gravel and silty sand with gravel, and there are zones of gravel. The gravel was encountered in boring MLN-5-03 to an elevation of about 292 ft and in boring MLN-6-03 between the elevations of about 285 and 290 feet. The fill extends to an elevation of about 285 ft, where glacial till is encountered.

Ground and Surface Water

No groundwater was detected during the subsurface investigation for this wall.

Impacts of Surface and Subsurface Site Conditions on Wall Construction

A major construction issue will be the limited room for equipment and overhead power lines that are to remain.

Construction vibrations should be minimized to reduce the likelihood of disturbing the existing rock wall and thereby minimizing the chances of damaging the existing credit union structure. We are not expecting groundwater to be encountered during drilling for the soldier piles. However, temporary casing may be required to prevent loss of ground and prevent the rock wall from being compromised. The soils are cohesionless, and are therefore subject to caving even without water being present. Below elevation 285 ft, we anticipate that very dense glacial till will be encountered, and therefore we do not expect that temporary casing will be necessary below this elevation.

1 A22 Wall 2

2 Subsurface Conditions

3 Soils along the A22 Wall 2 alignment consist of medium dense to dense silty sand with
4 gravel and sand with silt and gravel. These soils occur to an elevation of approximately
5 330 ft, as observed in borings A-1-03 and A-2-03. Below an elevation of 330 ft, borings A-
6 3-03 and A-4-03 indicate that very dense silty sand with gravel is present. This material is
7 interpreted as being glacial till.

8 Ground and Surface Water

9 We do not anticipate that groundwater will be encountered during most of the excavation
10 for A22 Wall 2. Water may be encountered between Sta. A22 99+00 and A22 102+00 (end
11 of wall). In this vicinity, groundwater has been measured at an elevation as high as 300 ft
12 in BP-1-03, which is located approximately 80 ft (RT) at about Sta 99+85.

13 Impacts of Subsurface Conditions on Wall Construction

14 The A22 Wall 2 will primarily be a cut wall. The maximum cuts required to reach the grade
15 elevations for A22 Wall 2 will be about 20-25 ft in the vicinity of A22 96+00 and A22
16 101+00.

17 The medium dense to dense soil conditions along most of the wall indicate that it may be
18 possible to simply trench the embedded portion of the wall, and cast the concrete against
19 the soil with no forms. Alternatively, the contractor may elect to open cut the area for the
20 wall and form the footing.

21 MLN Wall 1

22 Subsurface Conditions

23 Borings MLN-1-03 and MLN-2-03 indicate that up to 4 ft of fill consisting of gravel with sand
24 exists at the site. Below the fill, the soil at the wall location is very dense silty sand with
25 gravel; this material is interpreted to be glacial till. The glacial till appears to start at an
26 elevation of approximately 303 feet.

27 Groundwater

28 The water table appears to be approximately 10 ft below the base of the proposed wall.

29 Impacts of Subsurface Conditions on Wall Construction

30 The fill material, described as gravel with sand in the boring logs, should be expected to be
31 cohesionless and thus subject to caving when excavated. See the sections on Structure
32 excavation and shoring above for more information.

1 **MLN Wall 2**

2 **Subsurface Conditions**

3 This wall will be a fill wall. Boring MLN-4-03 indicates that there is approximately 1 to 5 ft of
4 very loose soil present at the bottom of the wall. The loose material is underlain by very
5 dense gravelly sand. The dense gravelly sand is encountered at an elevation of about 290
6 ft in both boring MLN-3-03 and MLN-4-03.

7 **Groundwater**

8 The water table appears to be at least 10 ft below the wall base.

9 **Impacts of Subsurface Conditions on Wall Construction**

10 Up to 3 ft of overexcavation may be needed for construction of MLN Wall 2. The horizontal
11 limits of the overexcavation should extend beyond both the front of the wall and the end of
12 the reinforcing strips. The borings and the existing ground line indicate that the loose
13 material likely occurs up station of MLN 11+50.

14 Excavation for MLN Wall 2 will take place within 10 ft of an existing office building (Center
15 Street Chiropractic). The footings are approximately 2 ft below existing grade. Based on
16 this information, the use of structural shoring should be anticipated for protection of the
17 building footings. A soldier pile type shoring system will be required due to the presence of
18 the dense gravelly sand, noted above.

19 There is an existing rock wall near the proposed face of MLN Wall 2 that will require
20 removal. The existing rock wall is approximately 3 ft high and extends approximately
21 between wall stations 7+00 and 7+50.

22 **A22 Wall 3 and A22 Wall 4 (Soil Nail Walls)**

23 These walls will be built in fills placed for the existing bridge. The A22 Wall 3 will be below
24 Pier 3 of the existing 19th St. Bridge. The Pier 3 bridge footing is at an elevation ranging
25 from approximately 317 to 319 ft, and it is set back from the wall face by approximately 12
26 feet.

27 The A22 Wall 4 will be adjacent to Pier 1 of Br. 16/22. The Pier 1 footing is at an elevation
28 ranging from approximately 326 to 328 ft, and it is set back approximately 35 ft from the
29 face of the wall.

30 **Subsurface Conditions**

31 The fills placed for the construction of the 19th St. Bridge consist of loose to dense silty
32 sand with gravel. Site soils within the elevations of A22 Wall 3 have fines contents that
33 range from 10 to 15%. Site soils within the elevations of A22 Wall 4 have fines contents
34 that range from 14 to 19%. The fills appear to overlie dense, glacial till, except as
35 discussed below.

36 Glacial till is encountered at both wall locations below an elevation of about 305 feet. It
37 consists of dense to very dense, poorly graded sand with silt and silty sand with gravel.

1 However, in boring A-6-03, near A22 Wall 4, the soil between the elevations of about 293
2 and 307 consists of loose gravel with silt and sand.

3 Test pits for the walls were confined to the fill material. The test pits revealed that there is a
4 significant fraction of cobble and boulder sized material that was not detected in the
5 borings. There was neither significant groundwater seepage nor sloughing into the test
6 pits.

7 **Groundwater**

8 At A22 Wall 4, groundwater was detected in boring A-6-03 at an elevation of about 307 ft;
9 however, groundwater was not encountered in either A-8-03 or C-11-86. The glacial till
10 begins at about elevation 305 feet. Based on water levels observed at the time of drilling
11 and the occurrence of the till below about 305 ft, it appears that there may be groundwater
12 perched on the till.

13 At A22 Wall 3 groundwater levels appear to be below elevation 306 ft, which is about 5 ft
14 below the bottom of the excavation that will be required for the drainage installations.
15 Therefore, significant volumes of groundwater are not expected during construction of A22
16 Wall 3.

17 **Impacts of Subsurface Conditions on Wall Construction**

18 Surface water must be controlled from entering the wall construction area. As discussed,
19 groundwater may be perched immediately above the glacial till.

20 Due to the cohesionless nature and the variable density of the soils in the vicinity of the
21 walls, the risk of portions of the wall face sloughing during construction is relatively high. In
22 order to enhance face stability during nail installation, measures such as the use of a
23 stabilizing berm, slot cutting and application of flash coats of shotcrete, prior to nail
24 installation, should be anticipated.

25 Based on the materials observed in the test pits, difficult drilling should be anticipated
26 during nail installation at both walls. The contractor should be prepared for drilling through
27 both dense and loose zones of cohesionless, gravelly soils that contain cobbles and/or
28 boulders. Caving conditions should be expected during nail installation. The use of
29 temporary casing, in order to maintain an open hole, should be anticipated. In the vicinity
30 of the existing bridge footings, it will be important that the contractor take measures to
31 prevent caving of the borehole during soil nail installation.

32 **Impacts of Other Site Conditions on Wall Construction**

33 A primary consideration for construction of both walls will be the limited headroom available
34 below the existing bridge and the limited space for a working platform that will be available,
35 especially near the bottom of the wall. Site geometry will likely require the use of smaller,
36 track mounted drilling equipment.

37 Significant excavation below the final grade of the walls will be required due to the
38 necessity of constructing them to the bottom elevation of the excavation that will be
39 necessary for the installation of the drainage structures. Hence, a limited work zone will be
40 available when installing the last row of nails. To maximize the available working space it
41 may be desirable to extend the excavation as close as possible to the remaining lanes of

1 SR-16. Since traffic lanes are to remain open during construction, shoring of the traffic side
2 of the excavation may be required.

3 **Fiber Optic Line at A22 Wall 3**

4 As verified by potholing, a fiber optic line intersects the wall's alignment within the nail
5 pattern. The top elevation of the fiber optic line was determined to be between 311.0 and
6 312.5 feet in the vicinity of the wall face. This places the fiber optic line in conflict with the
7 installation of both the soil nails and the installation of the drainage structures. Potholing
8 has revealed that the fiber optic cables are contained in two clay duct conduits that are
9 stacked vertically. The clay ducts are 9 in wide and have a total, stacked thickness of
10 approximately 23 inches.

11 The fiber optic line is to be abandoned by Qwest. All cables from the clay ducts will be
12 removed to a distance of 30 ft (measured perpendicular to the wall face) behind the wall.
13 Following removal of the fiber optic cables, the voids created will be backfilled with a
14 cement grout. The clay ducts will not be removed. Therefore, during soil nail installation,
15 the ducts will be encountered. Drilling equipment used for the installation of the soil nails
16 should be capable of penetrating the clay duct and cement grout.

17 Within the nail zone, the potholing has determined neither the size of the original utility
18 trench nor the condition of its backfill material. The trench backfill may be prone to caving
19 and sloughing. Therefore, utilization of one, or more, of the face stabilization techniques
20 discussed above should be anticipated.

21 **Existing Culvert at A22 Wall 3**

22 The existing culvert is an 18 inch inside diameter, class IV reinforced concrete pipe. It has
23 a wall thickness of 2 inches. It intersects the wall alignment at a very low skew angle.

24 The portion of the culvert that lies in front of the wall face is to be removed during
25 construction. In order to prevent disturbance of the soil behind the wall, the portion of the
26 culvert behind the wall face will be abandoned in place by backfilling it with a cement grout.
27 The low skew angle makes it difficult to determine exactly what length of the culvert will be
28 abandoned.

29 Since the condition of the trench backfill for the culvert is not known, it may create face
30 stability problems for the entire length of the wall. Therefore, utilization of one, or more, of
31 the face stabilization techniques discussed above should be anticipated.

32 Although the subsurface location of the culvert is not known very accurately it is anticipated
33 that all of the nails in Row 2, Wall Station 5+02.5 to 5+92.5, will encounter it. Therefore,
34 drilling equipment used for the installation of the soil nails must be capable of penetrating
35 the abandoned culvert and cement grout.

36

AVAILABLE GEOTECHNICAL REPORTS

The following geotechnical report contains design and construction information relevant to the project and is available at the Project engineers office:

T.M. Allen and D.T. Mooney, *Geotechnical Report*, SR-16 Union Ave. to Pearl St. 6th Avenue Overcrossing, Bridge 16/30, June 25, 2003.

T.M. Allen and D.T. Mooney, *Memorandum*, SR-16 Union Ave. to Jackson Ave.-HOV, 6th Avenue Overcrossing, Modifications to Drilled Shaft Design, December 22, 2003.

The following geotechnical memorandum contains additional information within the project limits. It is available at the E&EP Geotechnical Division, 1655 S. 2nd Ave. Tumwater WA.

A.J. Peters, *So. 12th St. to Narrows Br., 6th Ave. Overcrossing*, March 1, 1982.

T.M. Allen and M.Bahiradhan, *Geotechnical Report*, SR-16, XL-1201, Br16/31 – Pearl Street Over crossing Widening, November 29, 2001.

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7

8

9

10

APPENDIX C

Log of Test Borings



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14918

Job No. XL-1200

SR 16

Elevation 339.4 ft (103.4 m)

HOLE No. 19nw-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe JUdd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 11, 2003

Completion June 11, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station 19NW 36+00.09

Offset 37.41ft Rt.

Casing HW 4.5"/HQ 3.5"

Method Wet Rotary

Northing 702940.031

Easting 1142217.322

Latitude _____

Longitude _____

County Pierce

Subsection SE 1/4 of the SE 1/4

Section 2

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
1							2 2 5 (7)	D-1	GS MC	SM, MC=11% Silty SAND with gravel, loose, light brown, moist, Homogeneous, no HCl reaction, trace of organics 2.5 - 3.0' Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							>> 56/6 (56/6")	D-2	GS MC	SM, MC=10% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process mixed soil colors light brown to gray Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							45 50/3 (50/3")	D-3		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process mixed soil colors light brown to gray Length Recovered 0.8 ft, Length Retained 0.8 ft		
15							43 50/3 (50/3")	D-4		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.8 ft, Length Retained 0.8 ft		
20							>>					

06/11/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:57:28 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14918

Job No. XL-1200

SR 16

Elevation 339.4 ft (103.4 m)

HOLE No. 19nw-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe JUdd

Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							57/6 (57/6")	▲	D-5		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
7													
25							47 50/3 (50/3")	▲	D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.6 ft, Length Retained 0.6 ft		
8											End of test hole boring at 25.8 ft below ground elevation.		
9											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14915

Job No. XL-1200

SR 16

Elevation 347.0 ft (105.8 m)

HOLE No. 19st-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Jdd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 9, 2003

Completion June 9, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station A4 11+49.25

Offset 51.47ft Lt.

Casing HW 4.5"/HQ 3.5"

Method Wet Rotary

Northing 702623.457

Easting 1143389.678

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the NW 1/4

Section 12

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							4 5 4 (9)	D-1		GS MC	SP-SM, MC=4% Poorly graded SAND with silt and gravel, loose, light brown, moist, Homogeneous, no HCl reaction, trace of organic Length Recovered 0.8 ft, Length Retained 0.8 ft		
5							7 7 9 (16)	D-2		GS MC	SM, MC=10% Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							7 20 31 (51)	D-3			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated drilling process mixed soil colors light brown to gray Length Recovered 1.5 ft, Length Retained 1.5 ft		
15							21 28 45 (73)	D-4			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
20													

06/09/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:57:30 A3



LOG OF TEST BORING

Start Card S14915

Job No. XL-1200 SR 16

Elevation 347.0 ft (105.8 m)

HOLE No. 19st-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Jdd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							18 26 29 (55)	▲	D-5		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
7													
25							44 50/6 (50/6")	▲	D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
8													
9													
30							39 50/6 (50/6")	▲	D-7		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
											End of test hole boring at 31 ft below ground elevation.		
10											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14915

Job No. XL-1200

SR 16

Elevation 348.2 ft (106.1 m)

HOLE No. 19st-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 5, 2003

Completion June 5, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station A4 13+07.13

Offset 56.49ft Lt.

Casing HW 4.5"/HQ 3.5"

Method Wet Rotary

Northing 702622.594

Easting 1143232.231

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the NW 1/4

Section 12

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							16 18 24 (42)	D-1		GS MC	SP-SM, MC=12% Poorly graded SAND with silt and gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							14 23 25 (48)	D-2			Poorly graded SAND with silt and gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							35 50/6 (50/6")	D-3			Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
15							10 11 15 (26)	D-4		GS MC	SM, MC=18% Silty SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
20													

06/05/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:57:33 A3



LOG OF TEST BORING

Start Card S14915

Job No. XL-1200 SR 16

Elevation 348.2 ft (106.1 m)

HOLE No. 19st-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							21 27 35 (62)		D-5	GS MC	SM, MC=12% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process mixed soil colors light brown to gray Length Recovered 1.5 ft, Length Retained 1.5 ft		
25							>> 58/6 (58/6")		D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
30							>> 55/4 (55/4")		D-7	GS MC	SP-SM, MC=7% Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.3 ft, Length Retained 0.3 ft		
35							>> 68/6 (68/6")		D-8		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 35.5 ft below ground elevation.		
40											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14915

Job No. XL-1200

SR 16

Elevation 348.5 ft (106.2 m)

HOLE No. 19st-3-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 5, 2003

Completion June 5, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station A4 13+87.28

Offset 61.43ft Lt.

Casing HW 4.5"/HQ 3.5"

Method Wet Rotary

Northing 702619.474

Easting 1143151.989

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the NW 1/4

Section 12

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							5 15 21 (36)	D-1	GS MC		GP-GM, MC=8% Poorly graded GRAVEL with silt and sand, angular, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.2 ft		
5							11 13 21 (34)	D-2			Poorly graded GRAVEL with silt and sand, angular, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							19 50/6 (50/6")	D-3				06/05/2003	
15							50/6 (50/6")	D-4			Poorly graded GRAVEL with silt and sand, angular, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:57:36 A3



LOG OF TEST BORING

Start Card S14915

Job No. XL-1200 SR 16

Elevation 348.5 ft (106.2 m)

HOLE No. 19st-3-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							50/6 (50/6")	✕	D-5		Poorly graded GRAVEL with silt and sand, angular, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
25							>> 55/6 (55/6")	✕	D-6		Poorly graded GRAVEL with silt and sand, angular, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
8													
30							>> 58/6 (58/6")	✕	D-7		Poorly graded GRAVEL with silt and sand, angular, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
10											End of test hole boring at 30.5 ft below ground elevation.		
35											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14915

Job No. XL-1200

SR 16

Elevation 348.3 ft (106.2 m)

HOLE No. 19st-4-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 10, 2003

Completion June 10, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station PED2 78+28.76

Offset 7.77ft Rt.

Casing HW 4.5"/HQ3.5"

Method Wet Rotary

Northing 702732.63

Easting 1143178.868

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the NW 1/4

Section 12

Range 2 EWM

Township 20

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							14	▲	D-1	GS	SP-SM, MC=7% Poorly graded SAND with silt and gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							15	▲		MC			
							(30)	▲					
							7	▲	D-2				
2							18	▲			Poorly graded SAND with silt and gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process mixed soil colors light brown to gray Length Recovered 1.5 ft, Length Retained 1.5 ft		
							30	▲					
							(48)	▲					
10							45	▲	D-3		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
							50/6	▲					
							(50/6")	▲					
4											Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft 06/10/2003		
15							50/6	▲	D-4				
							(50/6")	▲					
5													
6													
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:57:38 A3



LOG OF TEST BORING

Start Card S14915

Job No. XL-1200 SR 16

Elevation 348.3 ft (106.2 m)

HOLE No. 19st-4-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							59/6 (59/6")		D-5	GS MC	SM, MC=12% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
25							60/5 (60/5")		D-6	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft		
30							65/5 (65/5")		D-7		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft End of test hole boring at 30.4 ft below ground elevation.		
10											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14915

Job No. XL-1200

SR 16

Elevation 349.9 ft (106.6 m)

HOLE No. 19st-5-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 10, 2003

Completion June 10, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station PED2 79+09.52

Offset 4.86ft Rt.

Casing HW 4.5"/HQ 3.5"

Method Wet Rotary

Northing 702795.12

Easting 1143125.876

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the NW 1/4

Section 12

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							5 4 5 (9)	D-1		GS MC	SM, MC=22% Silty SAND with gravel, loose, light brown, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.3 ft, Length Retained 0.1 ft		
5							30 50/6 (50/6")	D-2		GS MC	SM, MC=17% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process mixed soil colors light brown to gray Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							48 50/3 (50/3")	D-3			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.8 ft, Length Retained 0.8 ft		
15							>> 60/6 (60/6")	D-4			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
20													

06/10/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:57:41 A3



LOG OF TEST BORING

Start Card S14915

Job No. XL-1200 SR 16

Elevation 349.9 ft (106.6 m)

HOLE No. 19st-5-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							45 50/3 (50/3")	▲	D-5	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.8 ft, Length Retained 0.8 ft		
25							>> 54/6 (54/6")	▲	D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
8													
9							>> 58/6 (58/6")	▲	D-7		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 30.5 ft below ground elevation.		
30													
10											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S23803

Job No. XL-1200

SR 16

Elevation 336.1 ft (102.4 m)

HOLE No. 6SNW-1-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 29, 2003

Completion July 29, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station 6SN 20+48.14

Offset 74.05ft Rt.

Casing HQ 3.5"/HW 4.5"

Method Wet Rotary

Northing 706756.642

Easting 1140644.119

Latitude _____

Longitude _____

County Pierce

Subsection SW 1/4 of the NE 1/4

Section 12

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							9 16 30 (46)	D-1		GS MC	GW, MC=2% Well graded GRAVEL with sand, subangular, dense, light brown, dry, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							36 50/3 (50/3")	D-2		GS MC	SP-SM, MC=7% Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 0.8 ft, Length Retained 0.8 ft		
10							30 63 (63)	D-3		GS MC	SM, MC=10% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.0 ft, Length Retained 1.0 ft		
15							35 48 50/4 (98/10")	D-4		GS MC	SM, MC=14% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.3 ft, Length Retained 1.3 ft		
20											End of test hole boring at 16.3 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:57:43 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S23803

Job No. XL-1200 SR 16 Elevation 335.1 ft (102.1 m)

HOLE No. 6SNW-2-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 30, 2003 Completion July 3, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 6SN 18+62.91 Offset 84ft Rt. Casing HQ 3.5"/HW 4.5" Method Wet Rotary

Northing 706573.37 Easting 1140672.748 Latitude _____ Longitude _____

County Pierce Subsection SW 1/4 of the NE 1/4 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							5 7 (14)		D-1	GS MC	GW-GM, MC=7% Well graded GRAVEL with silt and sand, angular, medium dense, gray, dry, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							7 8 7 (15)		D-2	GS MC	SM, MC=11% Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							>> 30 55/6 (55/6")		D-3	GS MC	GP-GM, MC=7% Poorly graded GRAVEL with silt and sand, subangular, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
15							>> 18 21 38 (59)		D-4		Poorly graded GRAVEL with silt and sand, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
20											End of test hole boring at 16.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:57:45 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23803

Job No. XL-1200

SR 16

Elevation 333.7 ft (101.7 m)

HOLE No. 6SNW-3-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Brian Hills

Start August 6, 2003 Completion August 6, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station 6SN 16+63.68 Offset 76.09ft Rt. Casing 4"x17 Method Wet Rotary

Northing 706374.36 Easting 1140685.014 Latitude _____ Longitude _____

County Pierce Subsection SW1/4 NE1/4 Section 2 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							3 8 18 (21)	D-1		GS MC	SP-SM, MC=2% Poorly graded SAND with silt and gravel, dense, Lt. olive brown, dry, Homogeneous, no HCl reaction, with hair roots. Length Recovered 1.0 ft, Length Retained 1.0 ft		
5							15 20 20 (40)	D-2		GS MC	SP-SM, MC=6% Poorly graded SAND with silt and gravel, dense, grayish brown, moist, Homogeneous, no HCl reaction, with some FeO stains and silt. Length Recovered 0.8 ft, Length Retained 0.8 ft		
10							15 20 20 (40)	D-3			Poorly graded SAND with silt and gravel, dense, grayish brown, moist, Homogeneous, no HCl reaction, with some FeO stains and silt. Length Recovered 1.2 ft, Length Retained 1.2 ft		
15							>> 31 52/6" (52/6")	D-4			Poorly graded SAND with silt and gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction, Dry Hole Length Recovered 0.7 ft, Length Retained 0.7 ft		
20											End of test hole boring at 15.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:57:46 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S23803

Job No. XL-1200 SR 16 Elevation 326.6 ft (99.5 m)

HOLE No. 6SNW-4-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 31, 2003 Completion July 31, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 6SN 14+50.21 Offset 65.62ft Rt. Casing HW 4.5"/HQ 3.5" Method Wet Rotary

Northing 706176.352 Easting 1140710.635 Latitude _____ Longitude _____

County Pierce Subsection SW 1/4 of the NE 1/4 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							7 6 11 (17)	D-1	GS MC	GS MC	SM, MC=3% Silty SAND with gravel, medium dense, light brown, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							9 15 26 (41)	D-2	GS MC	GS MC	SM, MC=8% Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							>>> 43 59 (59)	D-3	GS MC	GS MC	SM, MC=10% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.0 ft, Length Retained 1.0 ft		
15							>>> 43 70 (70)	D-4	GS MC	GS MC	SM, MC=14% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 0.8 ft, Length Retained 0.8 ft End of test hole boring at 16 ft below ground elevation.		
20											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:57:48 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23803

Job No. XL-1200

SR 16

Elevation 332.9 ft (101.5 m)

HOLE No. 6SNW-5-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Vince Johnson

Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 29, 2003

Completion July 29, 2003

Well ID# _____

Equipment CME 55 w/ autohammer

Station 6SN 12+42.01

Offset 68.39 ft Rt.

Casing HQ x 18.0'

Method Wet Rotary

Northing 705997.499

Easting 1140790.904

Latitude _____

Longitude _____

County Pierce

Subsection SW 1/4 of the NE 1/4

Section 2

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
											0.0' to 2.5' Silty Gravel with sand. 100% drilling fluid return.		
1							>> 17 55/6 (55/6")	D-1	GS	MC	SM, MC=15%		
							>> 102/6 (102/6")	D-2	GS	MC	Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft SP, MC=13% Poorly graded SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). 100% drilling fluid return. Length Recovered 0.5 ft, Length Retained 0.5 ft		
5													
2													
							>> 23 40 50/5 (90/11")	D-3	GS	MC	SM, MC=16% Silty SAND, very dense, olive gray, moist, Homogeneous, no HCl reaction, trace of silt. Length Recovered 1.4 ft, Length Retained 1.0 ft		
10													
4							>> 25 38 38 (76)	D-4	GS	MC	SM, MC=8% Silty SAND with gravel, very dense, olive gray, moist, Laminated, no HCl reaction, trace of silt. (Till material). Length Recovered 1.5 ft, Length Retained 1.0 ft		
15													
5											End of test hole boring at 15 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
											Bailed hole dry. Ended and abandoned test hole at -15.0' below ground elevation. 7-29-03.		
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:57:50 A3



LOG OF TEST BORING

Start Card S 23807

Job No. XL-1200 SR 16 Elevation 335.1 ft (102.2 m)

HOLE No. 6SNW-6-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Cleo Andrews

Start August 11, 2003 Completion August 11, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station 6SN 10+49.23 Offset 49.08ft Rt. Casing HQ x 17.0' Method Wet Rotary

Northing 705817.214 Easting 1140861.849 Latitude _____ Longitude _____

County Pierce Subsection SW, NE Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1				◆			6 9 11 (20)	▲	D-1	GS MC	SM, MC=3% Silty SAND with gravel, medium dense, light gray, dry, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
5				◆			9 9 11 (20)	▲	D-2	GS MC	SW-SM, MC=7% Well graded SAND with silt and gravel, medium dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							50 50/3 (50/3")	▲	D-3		Well graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 0.7 ft, Length Retained 0.7 ft		
15							50 50/4 (50/4")	▲	D-4		Well graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Dry hole). Length Recovered 0.8 ft, Length Retained 0.8 ft		
20											End of test hole boring at 15.8 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S23803

Job No. XL-1200

SR 16

Elevation 336.1 ft (102.5 m)

HOLE No. 6SNW-7-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start August 4, 2003 Completion August 4, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station A22 159+78.32 Offset 125.16ft Rt. Casing HQ 3.5"/HW 4.5" Method Wet Rotary

Northing 705660.869 Easting 1140968.181 Latitude _____ Longitude _____

County Pierce Subsection SW 1/4 of the NE 1/4 Section 2 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							9 19 21 (40)	D-1		GS MC	SP-SM, MC=16% Poorly graded SAND with silt and gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							>> 28 48 56 (106)	D-2		GS MC	SM, MC=17% Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							>> 31 41 45 (86)	D-3			Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
15							>> 34 44 50 (94)	D-4			Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
20							>>>						

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:57:53 A3



LOG OF TEST BORING

Start Card S23803

Job No. XL-1200 SR 16

Elevation 336.1 ft (102.5 m)

HOLE No. 6SNW-7-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							31 39 45 (84)		D-5		Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
7											End of test hole boring at 21.5 ft below ground elevation.		
25											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
8													
9													
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23804

Job No. XL-1200

SR 16

Elevation 346.8 ft (105.7 m)

HOLE No. A-10-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 28, 2003

Completion July 28, 2003

Well ID# _____

Equipment CME 55 w/ autohammer

Station A22 67+25.95

Offset 152.56ft Lt.

Casing HQ x 33.0'

Method Wet Rotary

Northing 699492.892

Easting 1146742.877

Latitude _____

Longitude _____

County Pierce

Subsection NE 1/4 of the SW 1/4

Section 12

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							8		D-1	GS	0.0' to 3.5' silty GRAVEL with sand as indicated by drilling and wash return. 100% drilling fluid return. (Note changed at -7.0' drilling less harder hole advanced with very little down pressure).		
5							4			MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, medium dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
2							15						
24							(24)						
10							2		D-2	GS	SM, MC=16% Silty SAND with gravel, with organic soil with wood particles, loose, olive gray, moist, Stratified, no HCl reaction, organic soil is black in color, laminated with fine grained sand lens gray in color. 100% drilling fluid return. Length Recovered 1.0 ft, Length Retained 1.0 ft		
3							3			MC			
10							2						
15							(5)						
4							1		D-3	GS	SM, MC=26% Silty SAND, with organic soil, loose, grayish brown, moist, Stratified, no HCl reaction, organic soil is mixed with wood particles and root hairs dark brown in color. laminated with fine grained sand gray in color. Length Recovered 1.5 ft, Length Retained 1.0 ft		
15							2			MC			
15							3						
15							(5)						
5							5		D-4	GS	SM, MC=13% Silty SAND with gravel, dense, olive gray, moist, Laminated, no HCl reaction, with fine grained sand lenses gray in color. Very little drilling fluid loss starting at -18.5'		
6							12			MC			
20							36						
20							(48)						

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:57:55 A3



LOG OF TEST BORING

Start Card S 23804

Job No. XL-1200 SR 16

Elevation 346.8 ft (105.7 m)

HOLE No. A-10-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							>> 30 95/6 (95/6")	▲	D-5		Length Recovered 1.2 ft, Length Retained 1.0 ft 07/28/2003		
25											Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, (Till material). Started drilling harder at -21.5' encountered till material. Length Recovered 1.0 ft, Length Retained 1.0 ft		
8													
9							>> 100/5 (100/5")	▲	D-6		Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). Length Recovered 0.4 ft, Length Retained 0.4 ft		
30											End of test hole boring at 28.9 ft below ground elevation.		
10											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35											Bailed hole water table in casing at -21.9', waited 30 minutes water table recharged in casing at -18.8' below ground elevation. Ended and abandoned hole with hole plug.		
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-14928

Job No. XL-1200

SR 16

Elevation 337.1 ft (102.7 m)

HOLE No. A-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Dave Nelson

Start July 30, 2003

Completion July 31, 2003

Well ID# _____

Equipment CME 45 w/ autohammer

Station A22 94+75

Offset 0.1 ft Rt.

Casing HQ x 25.0

Method Wet Rotary

Northing 699961.205

Easting 1144061.918

Latitude _____

Longitude _____

County Pierce

Subsection SW 1/4 of NW 1/4

Section 12

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
1				5 14 16 (30)		D-1	GS MC	SM, MC=4% Silty SAND with gravel, dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
5				25 50/4 (50/4")		D-2	GS MC	SP-SM, MC=17% Poorly graded SAND with silt, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
10				50/6 (50/6")		D-3		Poorly graded SAND with silt, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
15				11 22 37 (59)		D-4		Poorly graded SAND with silt, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
20										

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:57:58 A3



LOG OF TEST BORING

Start Card S-14928

Job No. XL-1200 SR 16

Elevation 337.1 ft (102.7 m)

HOLE No. A-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							28 40 50 (90)	▲	D-5		Poorly graded SAND with silt, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
7													
25							38 50/4 (50/4")	▲	D-6		Poorly graded SAND with silt, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.9 ft		
8											End of test hole boring at 25.9 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
9													
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S23804

Job No. XL-1200

SR 16

Elevation 373.2 ft (113.8 m)

HOLE No. A-11-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start August 5, 2003

Completion August 5, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station A22 70+09.96

Offset 191.60 ft Lt.

Casing HQ 3.5"/HW 4.5"

Method Wet Rotary

Northing 699456.482

Easting 1146458.521

Latitude _____

Longitude _____

County Pierce

Subsection NE 1/4 of the SW 1/4

Section 12

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							5 7 8 (15)	D-1		GS MC	SW-SM, MC=19% Well graded SAND with silt, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							10 8 15 (23)	D-2		GS MC	SP-SM, MC=17% Poorly graded SAND with silt and gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.1 ft, Length Retained 1.1 ft		
10							10 11 11 (22)	D-3			Poorly graded SAND with silt and gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
15							51/6 (51/6")	D-4			Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:00 A3



LOG OF TEST BORING

Start Card S23804

Job No. XL-1200 SR 16

Elevation 373.2 ft (113.8 m)

HOLE No. A-11-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							59/4 (59/4")	✗	D-5		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 0.3 ft, Length Retained 0.3 ft End of test hole boring at 20.3 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
7													
25													
8													
9													
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23808

Job No. XL-1200

SR 16

Elevation 353.0 ft (107.6 m)

HOLE No. A-12-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Harvey Lic# 2599

Site Address _____

Inspector Hanning

Start August 12, 2003

Completion August 12, 2003

Well ID# NA

Equipment CME 850 w/ autohammer

Station A22 170+15.74

Offset 70.29ft Rt.

Casing HQ 3.5"

Method Wet Rotary

Northing 706563.982

Easting 1140549.988

Latitude _____

Longitude _____

County Pierce

Subsection SW/NE

Section 2

Range 2E

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							2 7 9 (16)		D-1	GS MC	SP, MC=2% Poorly graded SAND, root hairs, medium dense, gray, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
5							10 13 18 (31)		D-2	GS MC	SP, MC=10% Poorly graded SAND, root hairs, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							6 6 11 (17)		D-3		Poorly graded SAND, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
15							17 20 23 (43)		D-4	GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, dense, olive gray , moist, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
20							12 23		D-5		Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:03 A3



LOG OF TEST BORING

Start Card S 23808

Job No. XL-1200 SR 16

Elevation 353.0 ft (107.6 m)

HOLE No. A-12-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Harvey Lic# 2599

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							25 (48)	▲			Length Recovered 1.0 ft, Length Retained 1.0 ft		
7													
25							16 25 25 (50)	▲	D-6		Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
8													
30							17 16 16 (32)	▲	D-7		Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
9													
10													
35							15 16 17 (33)	▲	D-8		Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
11											End of test hole boring at 35.5 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23808

Job No. XL-1200

SR 16

Elevation 368.1 ft (112.2 m)

HOLE No. A-13-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Harvey Lic# 2599

Site Address _____

Inspector Hanning

Start August 12, 2003

Completion August 12, 2003

Well ID# NA

Equipment CME 850 w/ autohammer

Station A22 172+26.19

Offset 60.16ft Rt.

Casing HQ 3.5"

Method Wet Rotary

Northing 706769.827

Easting 1140505.017

Latitude _____

Longitude _____

County Pierce

Subsection SW/NE

Section 2

Range 2E

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
				2 5 10 (15)		D-1		Poorly graded SAND, root hairs, medium dense, gray, dry, Homogeneous, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.2 ft		
1										
5				15 17 20 (37)		D-2		Poorly graded SAND, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.1 ft, Length Retained 1.1 ft		
2										
10				7 9 31 (40)		D-3	GS MC	SP, MC=16% Poorly graded SAND with gravel, dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.2 ft		
3										
4										
15				12 26 33 (59)		D-4		Poorly graded SAND with gravel, very dense, olive gray, moist, Stratified, strong HCl reaction Length Recovered 1.3 ft, Length Retained 1.3 ft		
5										
20				20 21		D-5		Poorly graded SAND with gravel, dense, olive gray, moist, Stratified, no HCl reaction		
6										

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:05 A3

Start Card S 23808

Job No. XL-1200 SR 16

Elevation 368.1 ft (112.2 m)

HOLE No. A-13-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.Driller Harvey Lic# 2599[illegible]

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:05 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23808

Job No. XL-1200

SR 16

Elevation 375.8 ft (114.5 m)

HOLE No. A-14-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Harvey Lic# 2599

Site Address _____

Inspector Hanning

Start August 11, 2003

Completion August 11, 2003

Well ID# NA

Equipment CME 850 w/ autohammer

Station A22 174+35.71

Offset 61.83ft Rt.

Casing HQ 3.5"

Method Wet Rotary

Northing 706976.71

Easting 1140471.837

Latitude _____

Longitude _____

County Pierce

Subsection SW/NE

Section 2

Range 2E

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
				4 10 19 (29)	D-1			Poorly graded SAND, root hairs, dense, gray, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
1										
5				13 19 21 (40)	D-2			Poorly graded SAND, root hairs, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.3 ft		
2										
10	3			20 22 25 (47)	D-3		GS MC	SP-SM, MC=14% Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.9 ft, Length Retained 0.9 ft		
4										
15				13 21 32 (53)	D-4		GS MC	SP-SM, MC=13% Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
5										
20	6			21 30	D-5			Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Stratified, no HCl reaction		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:08 A3



LOG OF TEST BORING

Start Card S 23808

Job No. XL-1200 SR 16

Elevation 375.8 ft (114.5 m)

HOLE No. A-14-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Harvey Lic# 2599

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							50/4" (80/10")	◆			Length Recovered 1.0 ft, Length Retained 1.0 ft		
7													
25							22 26 24 (50)	◆	D-6		Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.2 ft		
8													
9							50/5" (50/5")	◆	D-7	GS MC	SP-SM, MC=12% Poorly graded SAND with silt and gravel, very dense, bluish gray, moist, Stratified, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft End of test hole boring at 29.4 ft below ground elevation.		
30													
10											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14938

Job No. XL-1200

SR 16

Elevation 333.6 ft (101.7 m)

HOLE No. A-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 23, 2003

Completion July 23, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station A22 97+00

Offset 0.61ft Lt.

Casing HW 4.5"/HQ 3.5"

Method Wet Rotary

Northing 700112.629

Easting 1143896.131

Latitude _____

Longitude _____

County Pierce

Subsection SW 1/4 of the NW 1/4

Section 12

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							6 7 7 (14)	D-1		GS MC	SP-SM, MC=4% Poorly graded SAND with silt and gravel, root fiber, medium dense, gray, dry, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							8 9 11 (20)	D-2		GS MC	SM, MC=10% Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							10 12 15 (27)	D-3			Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
15							8 11 13 (24)	D-4			Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.2 ft, Length Retained 1.2 ft		
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04 10:58:10 A3



LOG OF TEST BORING

Start Card S14938

Job No. XL-1200 SR 16

Elevation 333.6 ft (101.7 m)

HOLE No. A-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							18 23 27 (50)	▲	D-5	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
25							>> 20 23 28 (51)	▲	D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
30							>> 33 51/6 (51/6")	▲	D-7		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. drove on cobble. Length Recovered 1.0 ft, Length Retained 1.0 ft		
35							>> 63/6 (63/6")	▲	D-8		Well graded GRAVEL with silt and sand, angular, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 35.5 ft below ground elevation.		
40											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14938

Job No. XL-1200

SR 16

Elevation 324.0 ft (98.8 m)

HOLE No. A-3-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 28, 2003

Completion July 28, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station A22 100+11

Offset 4.1 ft Rt.

Casing HQ 3.5"/HW 4.5"

Method Wet Rotary

Northing 700361.057

Easting 1143708.343

Latitude _____

Longitude _____

County Pierce

Subsection SW 1/4 of the NW 1/4

Section 12

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
1				6 8 13 (21)	D-1		GS MC	SM, MC=8% Silty SAND with gravel, medium dense, light brown, dry, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
5				>> 10 18 50 (68)	D-2		GS MC	SM, MC=12% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
10				>> 33 36 50 (86)	D-3			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
15				>> 33 55/6 (55/6")	D-4			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process. Length Recovered 1.0 ft, Length Retained 1.0 ft		
20								End of test hole boring at 16 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:13 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14938

Job No. XL-1200 SR 16 Elevation 319.2 ft (97.3 m)

HOLE No. A-4-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 29, 2003 Completion July 29, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station A22 101+70 Offset 0.75ft Rt. Casing HQ 3.5"/HW 4.55" Method Wet Rotary

Northing 700504.649 Easting 1143641.105 Latitude _____ Longitude _____

County Pierce Subsection SW 1/4 of the NW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							50/6 (50/6")	◆	D-1		Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 0.5 ft, Length Retained 0.5 ft		
5							>> 28 35 36 (71)	◆	D-2	GS MC	SM, MC=10% Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							15 50/6 (50/6")	◆	D-3	GS MC	SM, MC=18% Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 0.8 ft, Length Retained 0.8 ft		
15							>> 56/6 (56/6")	◆	D-4		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 0.3 ft, Length Retained 0.3 ft		
20							>> ◆						

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:14 A3



LOG OF TEST BORING

Start Card S14938

Job No. XL-1200

SR 16

Elevation 319.2 ft (97.3 m)

HOLE No. A-4-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							55/6 (55/6")	▲	D-5		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 0.5 ft, Length Retained 0.5 ft		
7													
25							70/4 (70/4")	▲	D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 0.2 ft, Length Retained 0.2 ft End of test hole boring at 25.3 ft below ground elevation.		
8													
9													
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 14930

Job No. XL-1200 SR 16 Elevation 322.7 ft (98.4 m)

HOLE No. A-5-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Brian Hilts

Start August 5, 2003 Completion August 5, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station A22 127+26 Offset 72.3 ft Lt. Casing 4"x27" Method Wet Rotary

Northing 702747.433 Easting 1142426.757 Latitude _____ Longitude _____

County Pierce Subsection SW1/4 SW1/4 Section 1 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							>>	58/6" (58/6")	D-1	GS MC	SM, MC=2% Silty SAND with gravel, very dense, gray, dry, Homogeneous, no HCl reaction, with some hair roots. Drilling became easier at 4'. Length Recovered 0.4 ft, Length Retained 0.4 ft		
5							2 3 9 (12)		D-2	GS MC	SM, MC=11% Silty SAND with gravel, medium dense, grayish brown, wet, Homogeneous, no HCl reaction, at 7' encountered denser soil'. Length Recovered 0.5 ft, Length Retained 0.5 ft		
10							7 12 20 (32)		D-3		No Recovery		
15							5 2 4 (6)		D-4	GS MC	SM, MC=17% Silty SAND with gravel, loose, brown, moist, Homogeneous, no HCl reaction, with a trace of black organics. Length Recovered 0.6 ft, Length Retained 0.6 ft		
20													

8/5/03

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:17 A3



LOG OF TEST BORING

Start Card S 14930

Job No. XL-1200

SR 16

Elevation 322.7 ft (98.4 m)

HOLE No. A-5-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo

Lic# 2615

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							42 50/3" (50/3")	D-5		GS MC	SP-SM, MC=12% Poorly graded SAND with silt, very dense, grayish brown, moist, Homogeneous, no HCl reaction, with a trace of FeO stains. Length Recovered 0.8 ft, Length Retained 0.8 ft		
							36 50/3" (50/3")	D-6			Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction, with some gravel. After drilling the water table inside the casing was at 17'. Length Recovered 0.7 ft, Length Retained 0.7 ft		
25											End of test hole boring at 23.3 ft below ground elevation.		
8											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
9													
30													
10													
35													
11													
12													
40													
13													
45													



LOG OF TEST BORING

Start Card S 14195

HOLE No. A-6-03

Sheet 1 of 2

Driller Vince Johnson Lic# 2532

Inspector Cleo Andrews

Job No. XL-1200 SR 16 Elevation 316.6 ft (96.5 m)

Project Union Ave to Jackson Ave.

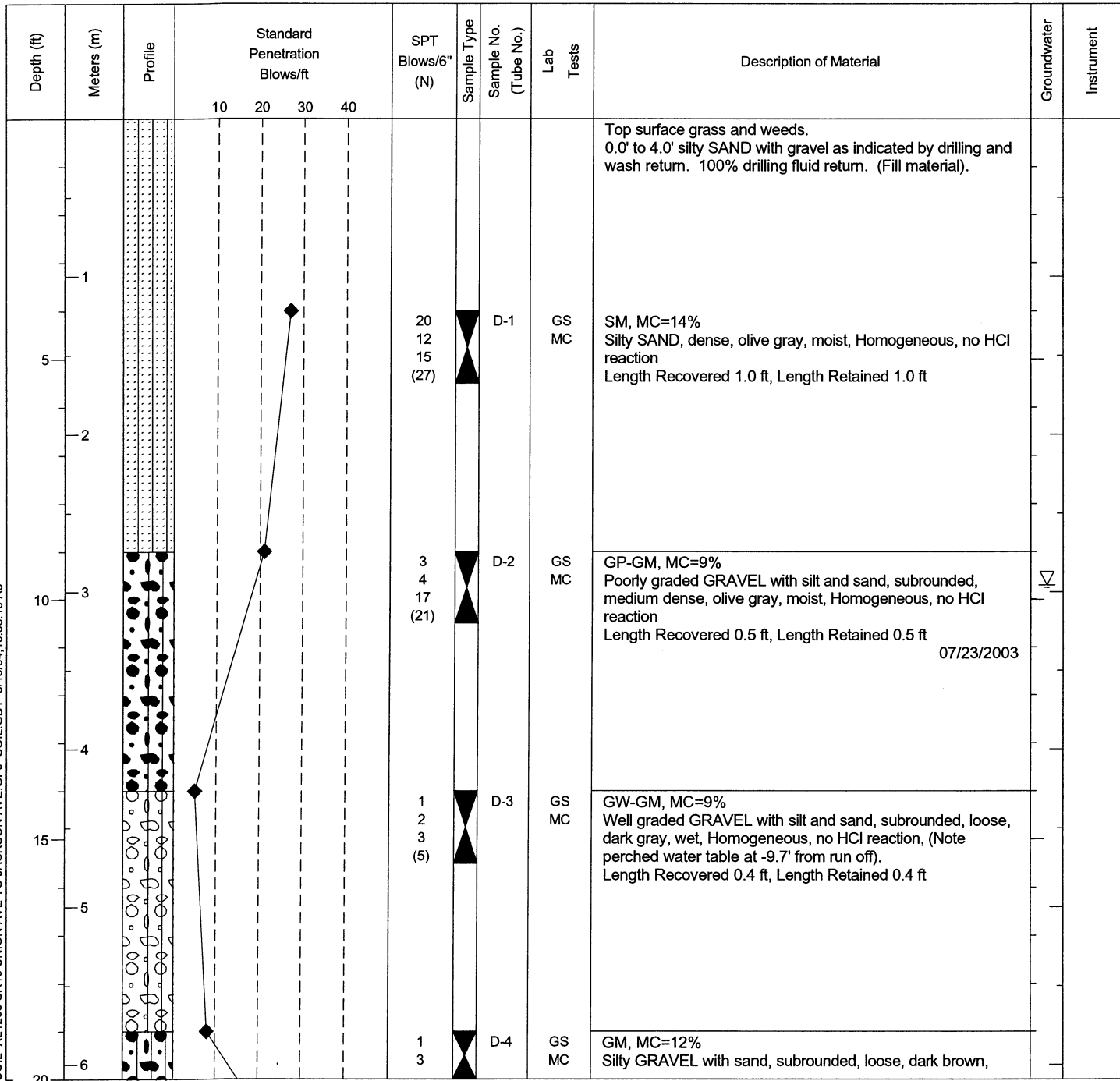
Site Address _____

Start July 23, 2003 Completion July 23, 2003 Well ID# _____ Equipment CME 55 w/ autohammer

Station A22 127+25.53 Offset 71.93ft Rt. Casing HQ 33.0' Method Wet Rotary

Northing 702819.152 Easting 1142551.891 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the NW 1/4 Section 12 Range 2 EWM Township 20 N





LOG OF TEST BORING

Start Card S 14195

Job No. XL-1200

SR 16

Elevation 316.6 ft (96.5 m)

HOLE No. A-6-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson

Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							5 (8)	▲			wet, Stratified, no HCl reaction, (Changed at 20.2' to 20.5' silty Sand with gravel, gravel is subrounded). (Note sample was retrieved with California sampler 2 1/2" ID). Length Recovered 1.0 ft, Length Retained 1.0 ft		
25							9 12 33 (45)	▲	D-5	GS MC	SM, MC=13% Silty SAND with gravel, with fine grained sand lenses, dense, dark gray, moist, Laminated, no HCl reaction, traces of organic, black in color. Very little drilling fluid loss. Length Recovered 1.5 ft, Length Retained 1.0 ft		
30							43 50/4 (50/4")	▲	D-6	GS MC	SM, MC=10% Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
											End of test hole boring at 29.8 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. Bailed hole water table stabilized in casing at -9.7' below ground elevation.		
35													
40													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 14930

Job No. XL-1200 SR 16 Elevation 321.7 ft (98.0 m)

HOLE No. A-7-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Brian Hilts

Start August 7, 2003 Completion August 7, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station A22 126+02 Offset 72.5 ft Lt. Casing 4"x22' Method Wet Rotary

Northing 702640.179 Easting 1142488.581 Latitude _____ Longitude _____

County Pierce Subsection SW1/4 SW1/4 Section 1 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							6 18 16 (34)	▲	D-1	GS MC	SP-SM, MC=5% Poorly graded SAND with silt and gravel, dense, gray, dry, Homogeneous, no HCl reaction, with some hair roots. Length Recovered 1.2 ft, Length Retained 1.2 ft		
5							14 12 13 (25)	▲	D-2	GS MC	SP-SM, MC=13% Poorly graded SAND with silt and gravel, dense, grayish brown, moist, Homogeneous, no HCl reaction, with a trace of wood debris. Drilling became easier from 8' to 12'. (loose zone) Length Recovered 0.8 ft, Length Retained 0.8 ft		
10							2 2 4 (6)	▲	D-3		Poorly graded SAND with silt and gravel, loose, grayish brown, moist, Homogeneous, no HCl reaction, with some wood debris. At 12' the soil became denser and lost water return. At 13.5' the soil became denser. Length Recovered 0.6 ft, Length Retained 0.6 ft		
15							10 12 9 (21)	▲	D-4		Poorly graded SAND with silt and gravel, medium dense, dark gray, wet, Homogeneous, no HCl reaction, with a trace of hair roots and black organics. Length Recovered 0.6 ft, Length Retained 0.6 ft		
20							24	▲	D-5		Poorly graded SAND with silt and gravel, very dense, grayish		

8/7/03



SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:22 A3



LOG OF TEST BORING

Start Card S 14930

Job No. XL-1200

SR 16

Elevation 321.7 ft (98.0 m)

HOLE No. A-7-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo

Lic# 2615

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
7							50/2" (50/2")			brown, wet, Homogeneous, no HCl reaction, (bail recharge test) bailed the hole to 18.3', 25 min. later the water table inside the casing was at 18.2'. Length Recovered 0.4 ft, Length Retained 0.4 ft End of test hole boring at 20.2 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
25												
8												
9												
30												
10												
35												
11												
12												
40												
13												
45												



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-14938

Job No. XL-1200 SR 16 Elevation 316.8 ft (96.6 m)

HOLE No. A-8-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Dave Nelson

Start August 4, 2003 Completion August 4, 2003 Well ID# _____ Equipment CME 45 w/ auto hammer

Station A22 124+74 Offset 72.6 ft Rt. Casing HQ x 15.0 Method Wet Rotary

Northing 702602.033 Easting 1142678.387 Latitude _____ Longitude _____

County Pierce Subsection SW 1/4 of NW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							12 28 34 (62)		D-1	GS MC	SM, MC=3% Silty SAND with gravel, very dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
1													
5							20 19 15 (34)		D-2	GS MC	SM, MC=11% Silty SAND, dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
2													
10							12 20 50/3 (70/9")		D-3		Silty SAND, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
3													
4													
15							35 50/6 (50/6")		D-4		Silty SAND, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
5													
6													
20											End of test hole boring at 16 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:24 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-23804

Job No. XL-1200

SR 16

Elevation 364.2 ft (111.0 m)

HOLE No. A-9-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Jamie Fetterly Lic# 2507

Site Address _____

Inspector Dave Nelson

Start July 28, 2003

Completion July 28, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station A22 63+96.35

Offset 149.50ft Lt.

Casing HQ x 15.0

Method Wet Rotary

Northing 699492.476

Easting 1147072.495

Latitude _____

Longitude _____

County Pierce

Subsection NE 1/4 of SW 1/4

Section 12

Range # EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							36 50/6 (50/6")	D-1		GS MC	SM, MC=11% Silty SAND with gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
5							>> 32 40 45 (95)	D-2		GS MC	SP-SM, MC=9% Poorly graded SAND with silt and gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
10							50/4 (50/4")	D-3			Poorly graded SAND with silt and gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 0.3 ft		
15							50/6 (50/6")	D-4			Poorly graded SAND with silt and gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 0.3 ft		
20											End of test hole boring at 15.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:26 A3

Start Card R62133

HOLE No. BP-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start May 29, 2003 Completion May 29, 2003 Well ID# AGS787 Equipment CME 850 w/ autohammer

Station PED2 52+44.98 Offset 123.81ft Lt. Casing HW 4.5"/HQ3.5" Method Wet Rotary

Northing 700385.423 Easting 1143792.814 Latitude _____ Longitude _____

County Pierce Subsection SE 1/4 of the NW 1/4 Section 12 Range 2 EWM Township 20N

[illegible]

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:28 A3



LOG OF TEST BORING

Start Card R62133

Job No. XL-1200

SR 16

Elevation 311.1 ft (94.8 m)

HOLE No. BP-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							45 50/2 (50/2")	▲	D-5	GS MC	SM, MC=10% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 0.7 ft, Length Retained 0.7 ft		
25							48 50/3 (50/3")	▲	D-6	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 0.8 ft, Length Retained 0.8 ft		
30							50/3 (50/3")	▲	D-7	GS MC	SW-SM, MC=12% Well graded SAND with silt, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 0.3 ft, Length Retained 0.3 ft		
35							>> 55/5 (55/5")	▲	D-8	GS MC	SM, MC=12% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft		
40							>> 65/6 (65/6")	▲	D-9		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 40.5 ft below ground elevation.		
45											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:28 A3



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card R 62165

Job No. XL-1200 SR 16 Elevation ft (m)

HOLE No. BP-1A-04

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start January 26, 2004 Completion January 26, 2004 Well ID# AHP-468 Equipment CME 850 w/ autohammer

Station _____ Offset _____ Casing HW x 32 Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection SW 1/4 pf the NW 1/4 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
											SAND		
1													
5													
2													
10													
3													
4													
15													
5													
6													
20													

01/27/2004



LOG OF TEST BORING

Start Card R 62165

Job No. XL-1200

SR 16

Elevation ft (m)

HOLE No. BP-1A-04

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Jody Dickson

Lic# 2637T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7													
25													
8													
9													
30											End of test hole boring at 30 ft below ground elevation.		
10											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card R 62133

Job No. XL-1200 SR 16 Elevation 325.7 ft (99.3 m)

HOLE No. BP-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Cooper Lic# 2552

Site Address _____

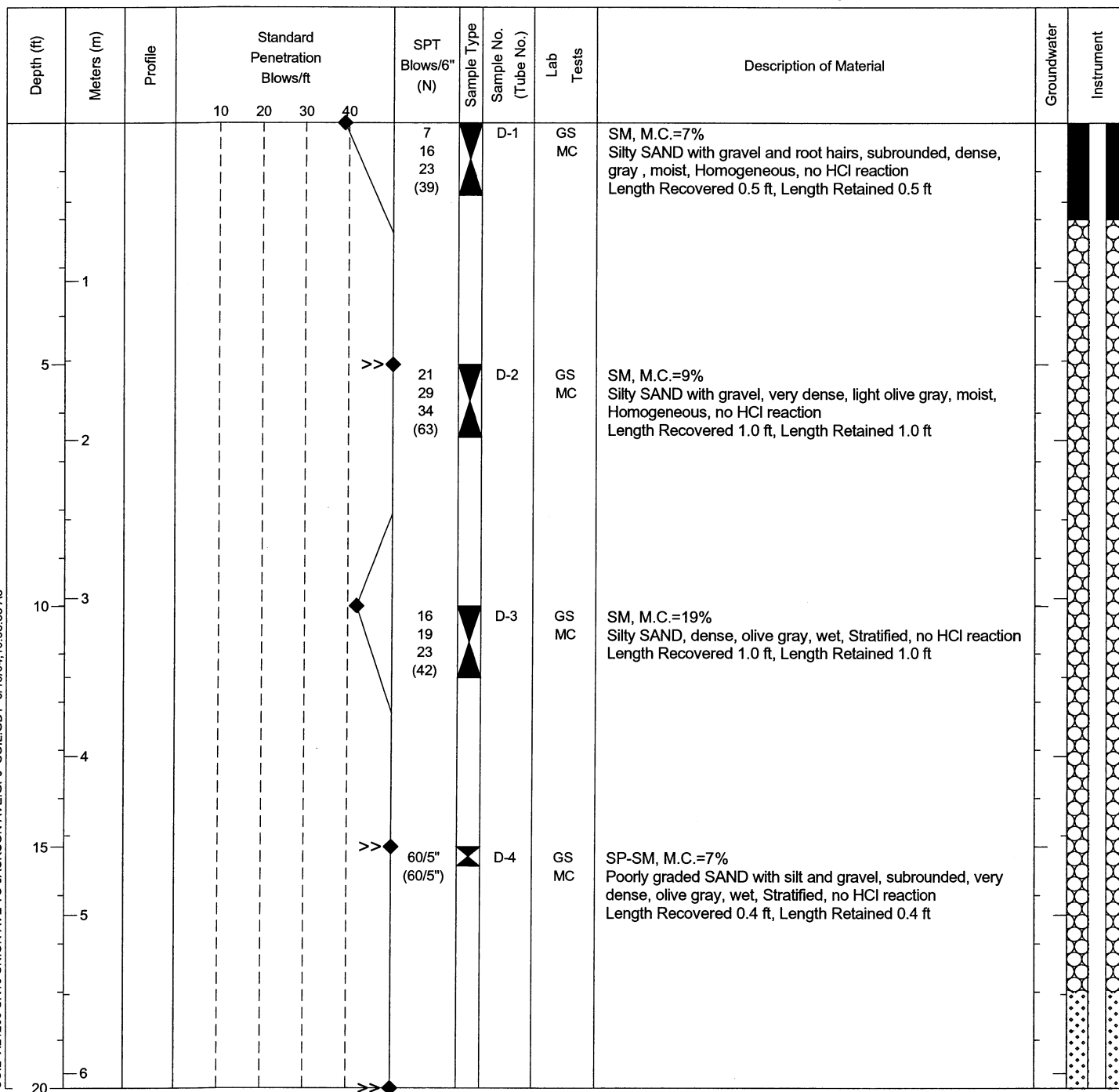
Inspector Hanning

Start July 17, 2003 Completion July 20, 2003 Well ID# AGS 788 Equipment CME 45 w/ autohammer

Station PED2 50+21.24 Offset 29.37ft Rt. Casing HQ 3.5 Method Wet Rotary

Northing 700266.227 Easting 1144036.36 Latitude _____ Longitude _____

County Pierce Subsection SE/NW Section 12 Range 2E Township 20N



SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:33 A3



LOG OF TEST BORING

Start Card R 62133

Job No. XL-1200

SR 16

Elevation 325.7 ft (99.3 m)

HOLE No. BP-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Cooper

Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							60/4" (60/4")		D-5		Well-graded gravel with sand, subrounded, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
7													
25							70/5" (70/5")		D-6		Well-graded gravel with sand, subrounded, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
8													
30							70/3" (70/3")		D-7		Well-graded gravel with sand, subrounded, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.2 ft, Length Retained 0.2 ft		
9													
35													
11							43 50/3" (50/3")		D-8	GS MC	GW, M.C.=7% Well-graded gravel with sand, subrounded, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
12													
40							50/5" (50/5")		D-9		Well-graded gravel with sand, subrounded, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft End of test hole boring at 40.3 ft below ground elevation.		
13											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
45													



LOG OF TEST BORING

Start Card S 23921

Job No. XL-1200 SR 16 Elevation 357.5 ft (109.0 m)

HOLE No. BP-3-04

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Jody Dickson Lic# 2637T

Site Address _____

Inspector Brian M Breck

Start January 26, 2004 Completion January 27, 2004 Well ID# _____ Equipment CME 850 w/ autohammer

Station 143+50 Offset 30ft Right Casing HQ x 27 Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the SW 1/4 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							1 2 1 (3)	▲	D-1	GS MC	SM, MC=19% Silty SAND with gravel, loose, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
1											NOTE: Contacted glacial till at 3.0ft		
5							>> 8 24 33 (55)	▲	D-2	GS MC	SM, MC=10% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft		
2							50/6 (50/6")	▲	D-3	GS MC	SM, MC=10% Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
10							32 50/4 (50/4")	▲	D-4	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
4							50/6 (50/6")	▲	D-5	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
15													
5													
20							>> 17 25	▲	D-6	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist,		



LOG OF TEST BORING

Start Card S 23921

Job No. XL-1200

SR 16

Elevation 357.5 ft (109.0 m)

HOLE No. BP-3-04

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Jody Dickson

Lic# 2637T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
							50 (75)			Homogeneous, no HCl reaction Length Recovered 1.5 ft		
7												
										01/27/2004		
25							>> 20 30 42 (72)	D-7	GS MC	SP-SM, MC=7% Poorly graded SAND with silt and gravel, very dense, gray, wet, Homogeneous, no HCl reaction Length Recovered 1.5 ft End of test hole boring at 25.5 ft below ground elevation.		
8												
										This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
9												
30												
10												
35												
11												
12												
40												
13												
45												



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-14932

Job No. XL-1200 SR 16 Elevation 334.0 ft (101.8 m)

HOLE No. CES-1-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Dave Nelson

Start July 30, 2003 Completion July 30, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station CES 18+30.26 Offset 21.54ft Lt. Casing HQ x 15 Method Wet Rotary

Northing 699937.347 Easting 1144302.852 Latitude _____ Longitude _____

County Pierce Subsection NE 1/4 of SW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							19 25 17 (42)	▲	D-1	GS MC	SM, MC=3% Silty SAND with gravel, dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
1													
5							14 17 18 (35)	▲	D-2	GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
2													
10							3 2 2 (4)	▲	D-3	GS MC	SM, MC=28% Silty SAND with gravel and wood chunks, very loose, dark grey, wet, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
3													
4													
15							50/6 (50/6")	▲	D-4	GS MC	GP, MC=6% Poorly graded GRAVEL with sand, subangular, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.3 ft End of test hole boring at 15.5 ft below ground elevation.		
5													
6													
20											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:39 A3



LOG OF TEST BORING

Start Card R 62147

Job No. XL-1200

SR 16

Elevation 327.1 ft (99.7 m)

HOLE No. CES-2-03

Sheet 1 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 22, 2003

Completion July 23, 2003

Well ID# AHP 401

Equipment CME 55 w/ autohammer

Station CES 19+48.86

Offset 0.68ft Lt.

Casing HWT x 63.0'

Method Wet Rotary

Northing 699998.837

Easting 1144201.631

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the SW 1/4

Section 12

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
											Top surface 0.3' of ASPHALT.		
											0.3' to 4.0' silty Gravel with sand as indicated by drilling and wash return. 100% drilling fluid return		
1													
5							8 12 12 (24)	D-1		GS MC	SM, MC=10% Silty SAND with gravel, medium dense, olive gray, moist, Homogeneous, no HCl reaction. Length Recovered 1.0 ft, Length Retained 1.0 ft		
2													
10							>> 23 57/6 (57/6")	D-2			Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till Material). 100% drilling fluid return. Length Recovered 1.0 ft, Length Retained 1.0 ft		
3													
15							48 50/4 (50/4")	D-3			Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
4													
5													
20							>> 85/6 (85/6")	D-4		GS MC	SP-SM, MC=14% Poorly graded SAND with silt and gravel, with 0.1' of sandy		
6													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:41 A3



LOG OF TEST BORING

Start Card R 62147

Job No. XL-1200 SR 16

Elevation 327.1 ft (99.7 m)

HOLE No. CES-2-03

Sheet 2 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7											Silt, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft		
25							70 50/2 (50/2")	D-5		GS MC	SP-SM, MC=11% Poorly graded SAND with silt and gravel, very dense, brownish gray, moist, Stratified, no HCl reaction, clean, traces of some coarser grains. Very little drilling fluid loss starting at 24.0'. Length Recovered 0.6 ft, Length Retained 0.6 ft 07/23/2003		
30							>> 25 36 50/4 (86/10")	D-6		GS MC	SM, MC=19% Silty SAND, very dense, olive gray, moist, Stratified, no HCl reaction, horizontally laminated with very fine grained sand and silt partings. Length Recovered 1.3 ft, Length Retained 1.0 ft		
35							>> 87/6 (87/6")	D-7		GS MC	SM, MC=9% Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till Material). Very little drilling fluid loss. (Note encountered 8" cobble from 31.5' to 32.1' as indicated by drilling). Length Recovered 0.5 ft, Length Retained 0.5 ft		
40							>> 36 37 50/3 (87/9")	D-8		GS MC	SM, MC=12% Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, traces of dark brown stains. Length Recovered 1.2 ft, Length Retained 1.0 ft		
45							>> 100/4 (100/4")	D-9		GS MC	SW-SM, MC=10% Well graded SAND with silt and gravel, very dense, olive		



LOG OF TEST BORING

Start Card R 62147

Job No. XL-1200

SR

16

Elevation 327.1 ft (99.7 m)

HOLE No. CES-2-03

Sheet 3 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson

Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14											gray, moist, Homogeneous, no HCl reaction, traces of yellowish orange stains. Length Recovered 0.3 ft, Length Retained 0.3 ft		
15							>> 65/6 (65/6")	▲	D-10		Well graded SAND with silt and gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
16													
17							>> 25 39 50/5 (89/11")	▲	D-11		Well graded SAND with silt and gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 1.4 ft, Length Retained 1.0 ft		
18							>> 32 62/6 (62/6")	▲	D-12		Well graded SAND with silt and gravel, very dense, dark brown, moist, Homogeneous, no HCl reaction, trace of silt. Length Recovered 1.0 ft, Length Retained 1.0 ft		
19											End of test hole boring at 60 ft below ground elevation.		
20											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
21											Bailed hole. Installed piezo well at -59.0', bailed piezo water table stabilized in piezo well at -26.1' after 15 minutes recharge period. 7-23-03.		



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card XL1200

Job No. XL-1200 SR 16 Elevation 308.8 ft (94.1 m)

HOLE No. CES-3-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 2, 2003 Completion July 2, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station CES 24+60.85 Offset 64.03ft Rt. Casing HQ 3.5"/HW 4.5" Method Wet Rotary

Northing 700047.491 Easting 1143686.187 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the SW 1/4 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							9 10 11 (21)	▲	D-1	GS MC	SM, MC=2% Silty SAND with gravel, trace of organics, medium dense, gray, dry, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.3 ft, Length Retained 1.3 ft		
1													
5							7 7 8 (15)	▲	D-2	GS MC	SM, MC=15% Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
2													
10							>> 27 31 41 (72)	▲	D-3	GS MC	SP-SM, MC=8% Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
3													
4													
15							28 50/6 (50/6")	▲	D-4		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
5											End of test hole boring at 16 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:58:45 A3



LOG OF TEST BORING

Start Card R62141

Job No. XL-1200

SR 16

Elevation 303.1 ft (92.4 m)

HOLE No. CES-4-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 1, 2003

Completion July 1, 2003

Well ID# AGS-800

Equipment CME 850 w/ autohammer

Station CES 25+70.69

Offset 40.06 ft Rt.

Casing HQ 3.5"/HW 4.5"

Method Wet Rotary

Northing 700012.009

Easting 1143579.511

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the SW 1/4

Section 12

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							10 18 28 (46)	D-1		GS MC	SM, MC=10% Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.4 ft, Length Retained 1.4 ft		
5							>> 14 27 53 (80)	D-2			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.3 ft, Length Retained 1.3 ft		
10							>> 66/6 (66/6")	D-3		GS MC	SM, MC=8% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
15							>> 69/6 (69/6")	D-4		GS MC	SM, MC=9% Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 15.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14931

Job No. XL-1200 SR 16 Elevation 312.5 ft (95.3 m)

HOLE No. CES-5-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

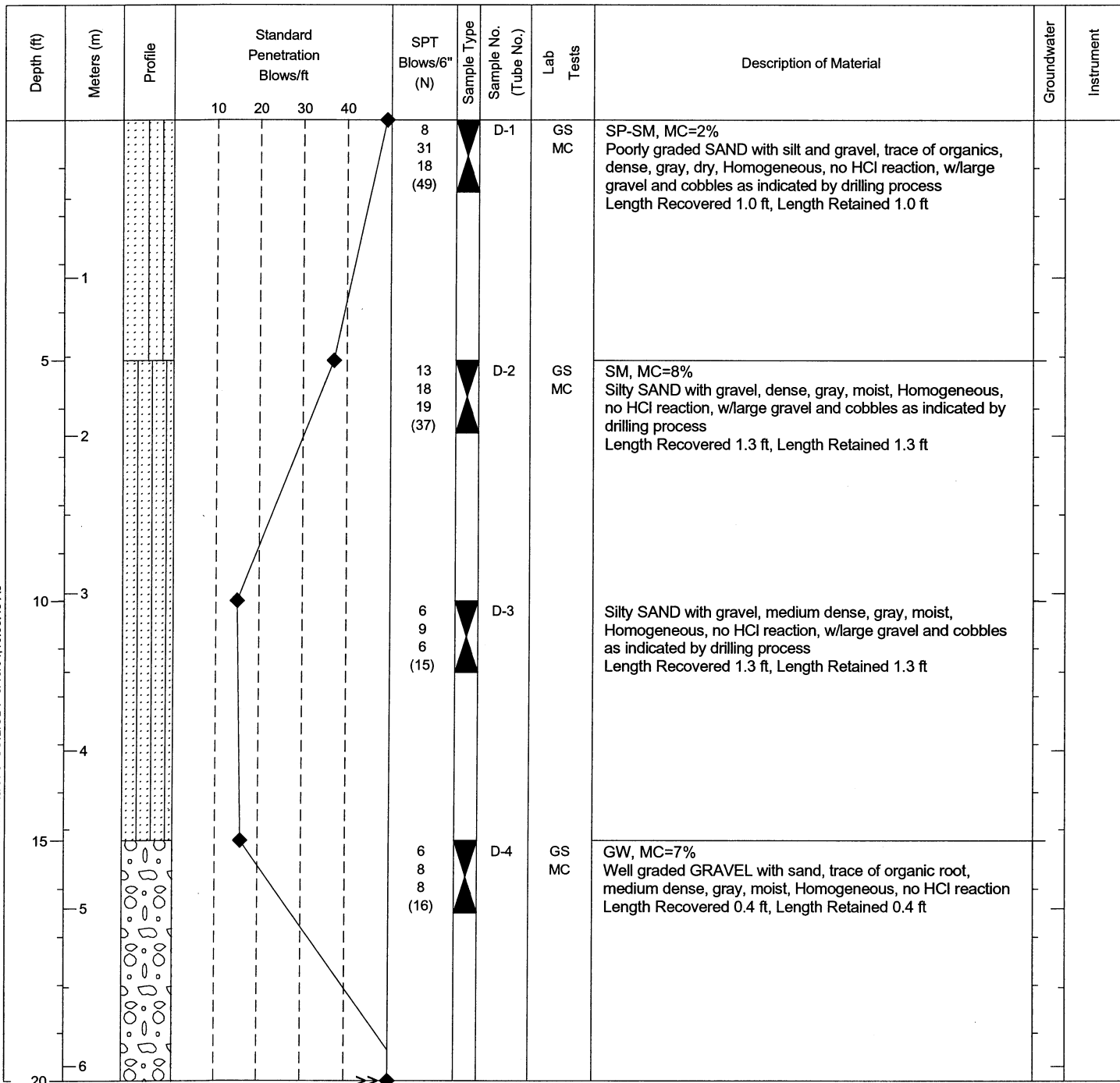
Inspector Dan Reed

Start July 2, 2003 Completion July 2, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station LEN 5+42.50 Offset 40.00ft Rt. Casing HQ 3.5"/HW 4.5" Method Wet Rotary

Northing 700014.259 Easting 1143440.82 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the SW 1/4 Section 12 Range 2 EWM Township 20N





LOG OF TEST BORING

Start Card S14931

Job No. XL-1200

SR 16

Elevation 312.5 ft (95.3 m)

HOLE No. CES-5-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							55/6 (55/6")	▲	D-5	GS MC	SP-SM, MC=15% Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
7													
25							63/6 (63/6")	▲	D-6		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 25.5 ft below ground elevation.		
8													
9													
30													
10													
35													
11													
12													
40													
13													
45													



LOG OF TEST BORING

Start Card S 14938

Job No. XL-1200 SR 16 Elevation 310.6 ft (94.7 m)

HOLE No. CES-6-03

Sheet 1 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 8, 2003 Completion July 8, 2003 Well ID# _____ Equipment CME 55 w/ autohammer

Station CES 23+06.85 Offset 8.94ft Rt. Casing HQ x 65.0' Method Wet Rotary

Northing 700009.036 Easting 1143845.157 Latitude _____ Longitude _____

County Pierce Subsection SW 1/4 of the NW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							1		D-1	GS	0.0' to 3.0' Sandy SILT with gravel as indicated by drilling and wash return. 100% drilling fluid return.		
5							2 2 (4)			MC	SM, MC=31% Silty SAND with gravel, organic, black in color, very loose, brown, moist, Stratified, no HCl reaction, traces of root hairs. Length Recovered 0.7 ft, Length Retained 0.7 ft		
2							17 17 20 (37)		D-2	GS	SM, MC=13% Silty SAND with gravel, dense, olive brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							22 65/6 (65/6")		D-3	GS	SM, MC=12% Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). Very little drilling fluid loss. Length Recovered 0.5 ft, Length Retained 0.5 ft		
4							22 30 26 (56)		D-4	GS	SP-SM, MC=8% Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
15										MC			
5													
6													
20													



LOG OF TEST BORING

Start Card S 14938

Job No. XL-1200

SR 16

Elevation 310.6 ft (94.7 m)

HOLE No. CES-6-03

Sheet 2 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson

Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							>> 22 38 43 (81)	▲	D-5		Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
25													
8							>> 90/6 (90/6")	▲	D-6	GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
9													
30													
10							>> 24 32 43 (75)	▲	D-7	GS MC	SM, MC=9% Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.4 ft, Length Retained 1.0 ft		
35													
11													
12							12 19 22 (45)	▲	D-8	GS MC	GW, MC=9% Well graded GRAVEL with sand, subrounded, dense, dark yellowish brown, moist, Homogeneous, no HCl reaction, trace of silt. (Approximately 1% drilling fluid loss starting at 38.0). Length Recovered 1.0 ft, Length Retained 1.0 ft		
40													
13							65 50/3 (50/3")	▲	D-9		Well graded GRAVEL with sand, subrounded, very dense, olive gray, moist, Homogeneous, no HCl reaction, loosely bonded together with a fine grained silt matrix. (Till material). Very little drilling fluid loss. Length Recovered 0.7 ft, Length Retained 0.7 ft		
45													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:52 A3



LOG OF TEST BORING

Start Card S 14938

Job No. XL-1200 SR 16

Elevation 310.6 ft (94.7 m)

HOLE No. CES-6-03

Sheet 3 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14													
							>> 33		D-10	GS	SP-SM, MC=14% Poorly graded SAND with silt, very dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.0 ft	07/08/2003	
							38			MC			
							45						
50							(83)						
15													
							>> 22		D-11		Poorly graded SAND with silt, very dense, olive brown, moist, Homogeneous, no HCl reaction, (Note encountered some coarser gravel from 55.8' to 56.5' as indicated by drilling). Length Recovered 1.5 ft, Length Retained 1.0 ft		
							26						
							25						
55							(51)						
16													
17													
18							>> 32		D-12		Poorly graded SAND with silt, very dense, dark brown, moist, Homogeneous, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.0 ft		
							40						
							50						
60							(90)						
19											End of test hole boring at 59.5 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
											Note: Bailed hole water table stabilized at in casing at -47.5' below ground level after 15 minute waiting period.		
20													
21													
70													



Start Card R-62152

Elevation 313.4 ft (95.5 m)

Sheet 1 of 2

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Brian Hilts

Start August 21, 2003 Completion August 21, 2003 Well ID# AHP-410 Equipment CME 45 w/ autohammer

Station	CES 25+04.09	Offset	276.57ft Rt.	Casing	4"x37'	Method	Wet Rotary
---------	--------------	--------	--------------	--------	--------	--------	------------

Northing 700255.55 Easting 1143623.55 Latitude Longitude

County Pierce Subsection SW1/4 NW1/4 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
1				8 15 13 (28)	D-1		GS MC	SM, MC=3% Silty SAND with gravel, dense, light brownish gray, dry, Homogeneous, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.3 ft		
5				6 7 8 (15)	D-2		GS MC	SM, MC=22% Silty SAND with gravel, medium dense, brown, moist, Homogeneous, no HCl reaction, with a trace of black organics. Length Recovered 0.4 ft, Length Retained 0.4 ft		
10				50/5" (50/5")	D-3			Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
15				30 50/6" (50/6")	D-4		GS MC	SM, MC=11% Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction, with a trace of FeO stains. Length Recovered 0.8 ft, Length Retained 0.8 ft		
20				>>						

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:55 A3



LOG OF TEST BORING

Start Card R-62152

Job No. XL-1200 SR 16

Elevation 313.4 ft (95.5 m)

HOLE No. CES-7-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							7 26 29 (55)	▲	D-5		Silty SAND with gravel, very dense, gray, moist, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
7													
25							50/4" (50/4")	▲	D-6		Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
8													
30							50/4" (50/4")	▲	D-7		Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
9													
35							52/6" (52/6")	▲	D-8	GS MC	SM, MC=10% Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction, we bailed the hole to 31.8', 10 min. later the water table inside the casing was at 32'. Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 35.5 ft below ground elevation.		
11											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14913

Job No. XL-1200

SR 16

Elevation 346.3 ft (105.5 m)

HOLE No. CSE-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start May 28, 2003

Completion May 28, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station CSE 19+48.27

Offset 16.21ft Rt.

Casing HW 4.5"/HQ3.5"

Method Wet Rotary

Northing 699695.707

Easting 1144086.462

Latitude _____

Longitude _____

County Pierce

Subsection NE 1/4 of the SW 1/4

Section 12

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							3 4 3 (7)	D-1		GS MC	SP-SM, MC=26% Poorly graded SAND with silt and gravel, loose, gray, moist, Homogeneous, no HCl reaction, trace of organics Length Recovered 0.8 ft, Length Retained 0.8 ft		
5							5 5 6 (11)	D-2		GS MC	SM, MC=13% Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							4 8 6 (13)	D-3		GS MC	GW, MC=10% Well graded GRAVEL with sand, subangular, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.2 ft, Length Retained 1.2 ft		
15							4 4 3 (7)	D-4		GS MC	SP-SM, MC=12% Poorly graded SAND with gravel, loose, gray, moist, Homogeneous, no HCl reaction, trace of asphalt w/large gravel as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
20													

05/28/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:58:58 A3



LOG OF TEST BORING

Start Card S14913

Job No. XL-1200 SR 16

Elevation 346.3 ft (105.5 m)

HOLE No. CSE-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40	8 9 11 (20)		D-5	GS MC	SM, MC=14% Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.4 ft, Length Retained 1.4 ft		
7										
25				50/4 (50/4")		D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft		
8										
30				50/6 (50/6")		D-7	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft		
9										
10										
35				50/6 (50/6")		D-8		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft End of test hole boring at 35.5 ft below ground elevation.		
11								This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
12										
40										
13										
45										

LOG OF TEST BORING

Start Card R62134

Job No. XL-1200 SR 16 Elevation 310.8 ft (94.7 m)

HOLE No. CSE-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

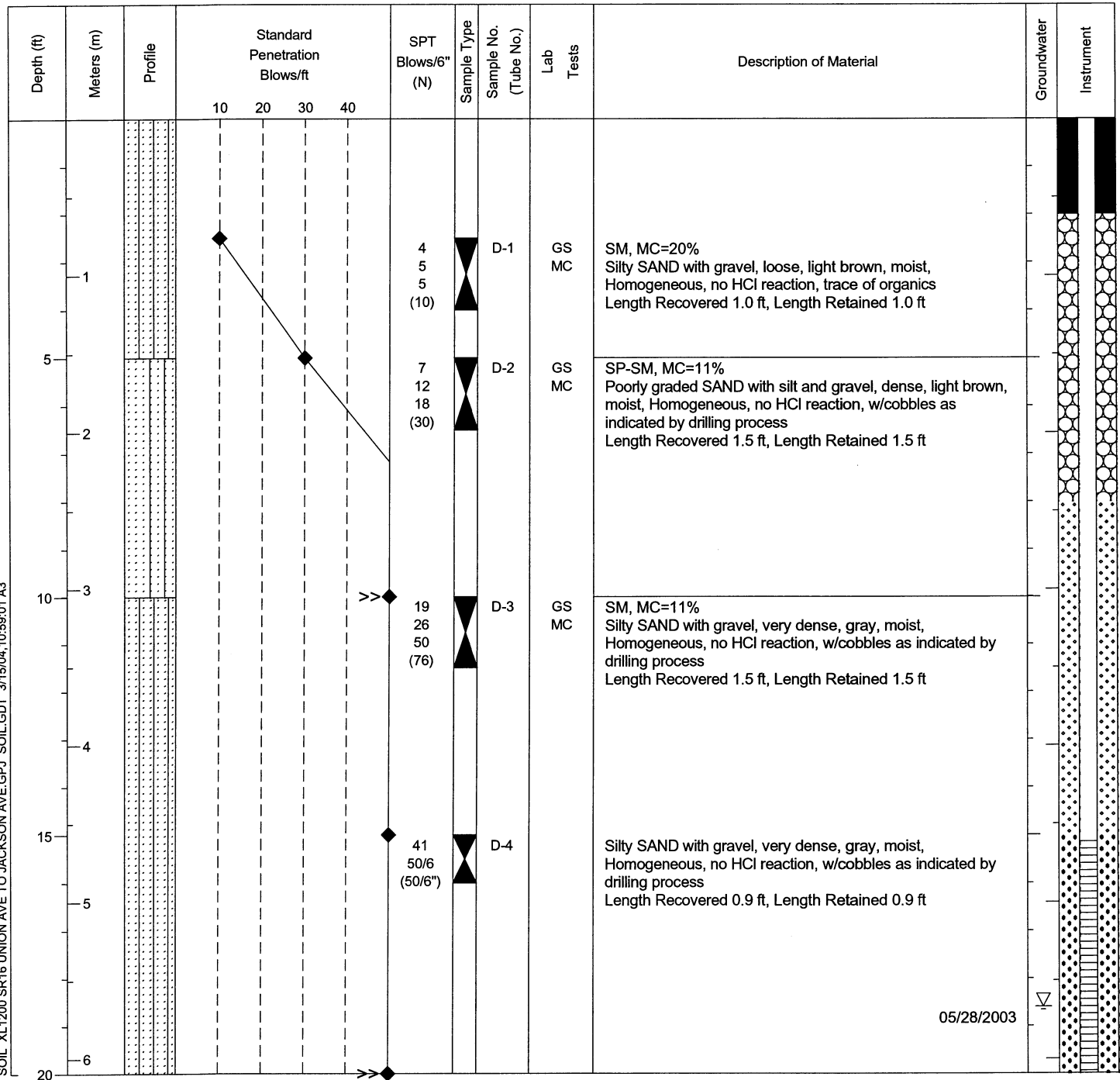
Inspector Dan Reed

Start May 28, 2003 Completion May 28, 2003 Well ID# AGS789 Equipment CME 850 w/ autohammer

Station CSE 16+99.66 Offset 109.65ft Lt. Casing HW 4.5"/HQ 3.5" Method Wet Rotary

Northing 699886.586 Easting 1143883.844 Latitude _____ Longitude _____

County Pierce Subsection NE 1/4 of the SW 1/4 Section 12 Range 2 EWM Township 20N





LOG OF TEST BORING

Start Card R62134

Job No. XL-1200 SR 16

Elevation 310.8 ft (94.7 m)

HOLE No. CSE-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							55/6 (55/6")		D-5		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
25							50 50/2 (50/2")		D-6	GS MC	SM, MC=10% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 0.7 ft, Length Retained 0.7 ft End of test hole boring at 25.7 ft below ground elevation.		
8											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
9													
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14931

Job No. XL-1200

SR 16

Elevation 311.5 ft (94.9 m)

HOLE No. CSE-3-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 2, 2003

Completion July 2, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station CSE 14+93.99

Offset 48.58 ft.

Casing HQ 3.5"/HW 4.5"

Method Wet Rotary

Northing 699794.522

Easting 1143641.23

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the SW 1/4

Section 12

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
				3 11 15 (26)		D-1	GS MC	SM, MC=7% Silty SAND with gravel, trace of organics, dense, gray, dry, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.3 ft, Length Retained 1.3 ft		
1										
5				>> 39 58/6 (58/6")		D-2	GS MC	SM, MC=11% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
2										
10				>> 39 54/6 (54/6")		D-3		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
3										
4										
15				>> 65/6 (65/6")		D-4		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
5										
6										
20				>>						

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:04 A3



LOG OF TEST BORING

Start Card S14931

Job No. XL-1200 SR 16

Elevation 311.5 ft (94.9 m)

HOLE No. CSE-3-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							62/6 (62/6")	✗	D-5	GS MC	SM, MC=11% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel and cobbles as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 20.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
7													
25													
8													
9													
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card R 62147

Job No. XL-1200

SR 16

Elevation 306.4 ft (93.4 m)

HOLE No. CSE-4-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 15, 2003

Completion July 15, 2003

Well ID# AHP 405

Equipment CME 55 w/ autohammer

Station CSE 13+16.21

Offset 53.11ft Rt.

Casing HWT x 20.0'

Method Wet Rotary

Northing 699841.54

Easting 1143469.727

Latitude _____

Longitude _____

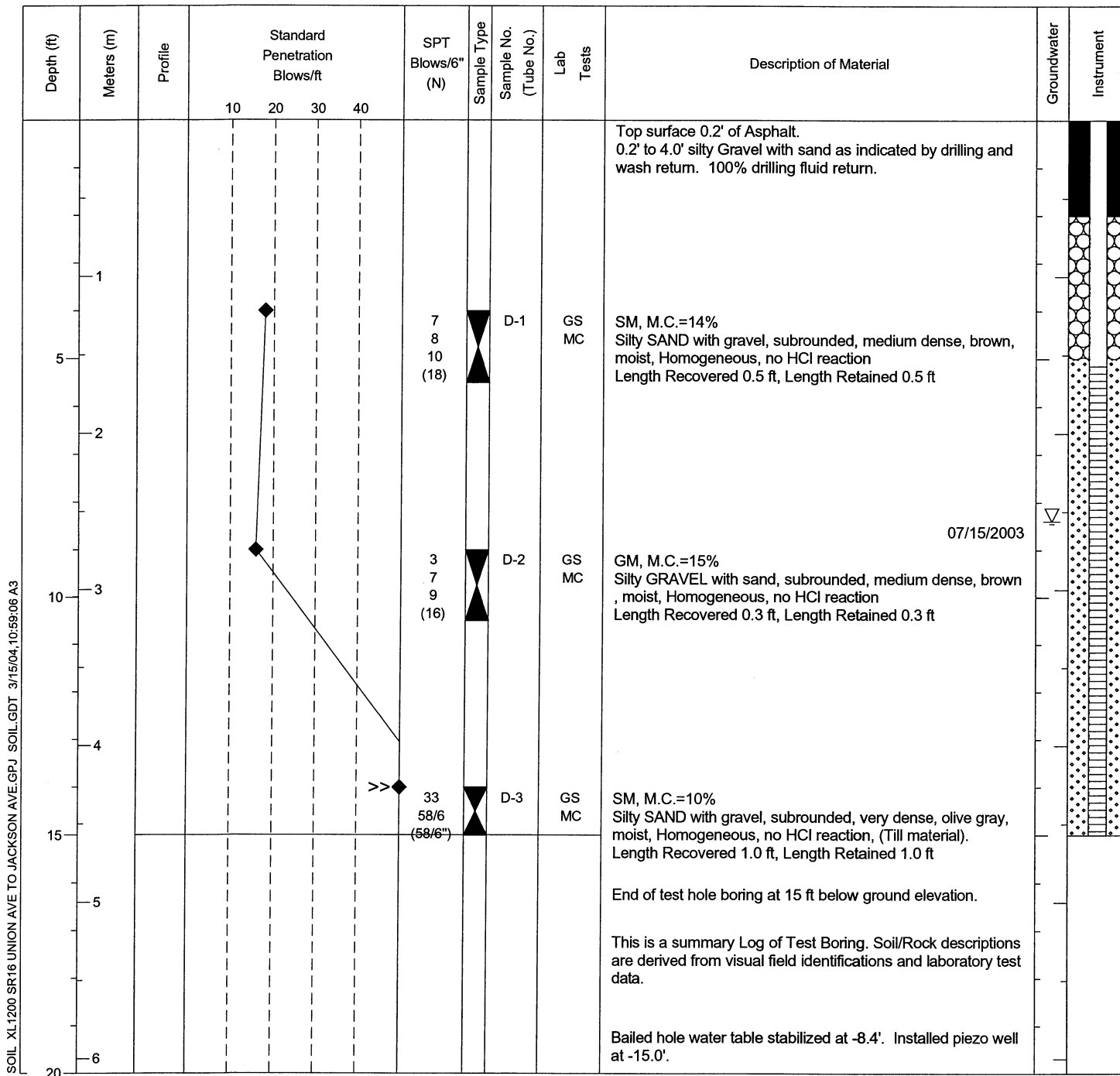
County Pierce

Subsection NW 1/4 of the SW 1/4

Section 12

Range 2 EWM

Township 20 N





LOG OF TEST BORING

Start Card R 62137

Job No. XL-1200 SR 16 Elevation 304.4 ft (92.8 m)

HOLE No. MLN-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 21, 2003 Completion July 21, 2003 Well ID# AGS 793 Equipment CME 55 w/ autohammer

Station MLN 10+93 Offset 39.3 ft Rt. Casing HWT x 33.0' Method Wet Rotary

Northing 699673.387 Easting 1143304.147 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the SW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
											Top surface 0.2' of Asphalt. 0.2' to 3.5' silty Gravel with sand as indicated by drilling and wash return. 100% drilling fluid return. (Fill Material).		
1							>> 16		D-1	GS MC	SM, M.C.=9% Silty SAND with gravel, subrounded, very dense, brownish gray, moist, Homogeneous, no HCl reaction, Length Recovered 1.3 ft, Length Retained 1.0 ft		
5							28 39 (67)						
2									D-2		Silty SAND with gravel, subrounded, very dense, brownish gray, moist, Homogeneous, no HCl reaction, trace of silt. Very little drilling fluid loss. (Till material). Length Recovered 0.9 ft, Length Retained 0.9 ft		
3							37 50/5 (50/5")						
4									D-3		Silty SAND with gravel, subrounded, very dense, brownish gray, moist, Homogeneous, no HCl reaction, (Till Material). Length Recovered 1.0 ft, Length Retained 1.0 ft		
15							>> 42						
							53/6 (53/6")						
5									D-4	GS MC	SM, M.C.=9% Silty SAND with gravel, subrounded, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till Material), Very little drilling fluid loss.		
6							100/6 (100/6")						
20													



LOG OF TEST BORING

Start Card R 62137

Job No. XL-1200

SR 16

Elevation 304.4 ft (92.8 m)

HOLE No. MLN-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson

Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7											Length Recovered 0.5 ft, Length Retained 0.5 ft		
25							50 50/3 (50/3")	D-5		GS MC	SM, M.C.=12% Silty SAND, very dense, olive gray, moist, Stratified, no HCl reaction, from 23.5' to 23.7' 0.2' of silty sand with Gravel. (Till Material). Length Recovered 0.7 ft, Length Retained 0.7 ft	07/21/2003	
8													
9							43 50/6 (50/6")	D-6			Silty SAND, very dense, olive gray, moist, Stratified, no HCl reaction, from 29.0' to 29.5' sandy Silt with gravel. (Till Material). Length Recovered 1.0 ft, Length Retained 1.0 ft	11/09/2003 12/03/2003	
30											End of test hole boring at 29.5 ft below ground elevation.		
10											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35											Bailed hole , installed piezo pipe with 10.0' slotted screen at 28.5' below ground elevation. Bailed Piezo Well water table stabilized at -25.7' after 15 minutes waiting period. 7-21-03.		
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 14927

Job No. XL-1200 SR 16 Elevation 307.5 ft (93.7 m)

HOLE No. MLN-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 14, 2003 Completion July 14, 2003 Well ID# _____ Equipment CME 55 w/ autohammer

Station MLN 11+59 Offset 34.8 ft Rt. Casing HQ x 35.0' Method Wet Rotary

Northing 699739.299 Easting 1143302.067 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the SW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1											Top surface 0.2' of ASPHALT		
5							>> 56 86 (86)	▲	D-1	GS MC	SM, M.C.=7% Silty SAND with gravel, angular, very dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							>> 33 72 (72)	▲	D-2	GS MC	SM, M.C.=12% Silty SAND with gravel, with fine grained silt lenses, very dense, olive gray, moist, Laminated, no HCl reaction, (Till material). 100% drilling fluid return. Length Recovered 1.0 ft, Length Retained 1.0 ft		
15							85 50/3 (50/3')	▲	D-3		Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). Length Recovered 0.7 ft, Length Retained 0.7 ft		
20							80 50/3	▲	D-4	GS MC	SM, M.C.=8% Silty Sand with gravel, angular, very dense, olive gray, moist,		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:59:11 A3



LOG OF TEST BORING

Start Card S 14927

Job No. XL-1200

SR 16

Elevation 307.5 ft (93.7 m)

HOLE No. MLN-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson

Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							(50/3")				Homogeneous, no HCl reaction, (Till material). 100% drilling fluid return. Length Recovered 0.7 ft, Length Retained 0.7 ft		
7													
25							>> 34 65 (65)	D-5		GS MC	SM, M.C.=11% Silty SAND, with fine grained sand lenses, very dense, olive gray, moist, Laminated, no HCl reaction, (Till material). Length Recovered 1.0 ft, Length Retained 1.0 ft		
8													
9							32 50 (50)	D-6			Silty SAND with gravel, subrounded, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). 100% drilling fluid return. (Dry hole). 7-14-03. Length Recovered 1.0 ft, Length Retained 1.0 ft		
30											End of test hole boring at 30 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 14927

Job No. XL-1200 SR 16 Elevation 295.8 ft (90.2 m)

HOLE No. MLN-3-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start June 12, 2003 Completion June 12, 2003 Well ID# _____ Equipment CME 55 w/ autohammer

Station MLN 10+73 Offset 36.9 ft Lt. Casing HQ 3.5" OD x 35.0' Method Wet Rotary

Northing 699655.871 Easting 1143227.32 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the SW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1											Top surface 0.2' of ASPHALT 0.3' of BALLAST. 0.5' to 4.5' Well graded GRAVEL with sand trace of silt as indicated by drilling and wash return. Very little drilling fluid loss. (Fill material).		
5							14 14 16 (30)		D-1		Well graded GRAVEL with sand, subrounded, dense, olive brown, moist, Homogeneous, no HCl reaction, trace of silt. Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							39 50/4 (50/4")		D-2		Well graded GRAVEL with sand, subrounded, very dense, olive brown, moist, Homogeneous, no HCl reaction, trace of silt. Length Recovered 0.8 ft, Length Retained 0.8 ft		
15							>> 48 48 47 (95)		D-3		Silty GRAVEL with sand, with 0.5' of sandy silt, subrounded, very dense, olive gray, moist, Stratified, no HCl reaction, laminated with sand lenses, traces of brown weathering stains. Very little drilling fluid loss. Length Recovered 1.5 ft, Length Retained 1.0 ft		
20							>> 40		D-4		Silty SAND with gravel, very dense, olive gray, moist,		

06/12/2003



LOG OF TEST BORING

Start Card S 14927

Job No. XL-1200

SR 16

Elevation 295.8 ft (90.2 m)

HOLE No. MLN-3-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson

Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							53/6 (53/6")	▲			Homogeneous, no HCl reaction, Length Recovered 0.8 ft, Length Retained 0.8 ft		
7													
25							45 50/4 (50/4")	▲	D-5		Well graded GRAVEL with sand, subrounded, very dense, dark yellowish brown, moist, Homogeneous, no HCl reaction, trace of silt. Very little drilling fluid loss. Length Recovered 0.8 ft, Length Retained 0.8 ft		
8													
9							>> 37 70/6 (70/6")	▲	D-6		Poorly graded SAND with gravel, very dense, olive brown, moist, Homogeneous, no HCl reaction, Bailed hole water table stabilized in casing at -17.6' after 15 minute waiting period. Length Recovered 1.0 ft, Length Retained 1.0 ft		
30											End of test hole boring at 30.5 ft below ground elevation.		
10											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35													
11													
12													
40													
13													
45													



LOG OF TEST BORING

Start Card S-14927

Job No. XL-1200 SR 16 Elevation 303.4 ft (92.5 m)

HOLE No. MLN-4-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Dave Nelson

Start July 29, 2003 Completion July 29, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station MLN 11+59 Offset 33.3 ft Lt. Casing HQ x 17.0 Method Wet Rotary

Northing 699741.944 Easting 1143233.931 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of SW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1													
5							2 2 2 (4)	D-1		GS MC	GW, MC=4% Well graded GRAVEL with sand, very loose, brown, wet, Homogeneous, no HCl reaction, back fill in sewer ditch Length Recovered 0.1 ft		
2													
10							3 2 2 (4)	D-2			Well graded GRAVEL with sand, very loose, brown, wet, Homogeneous, no HCl reaction, back fill in sewer ditch Length Recovered 0.3 ft		
3													
4													
15							50/6 (50/6")	D-3		GS MC	SM, MC=10% Silty SAND, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
5													
							50/0 (50/0")	D-4			No Recovery		
6											End of test hole boring at 17 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20													



LOG OF TEST BORING

Start Card S 14937

Job No. XL-1200

SR 16

Elevation 295.4 ft (90.0 m)

HOLE No. MLN-5-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 9, 2003

Completion July 9, 2003

Well ID# _____

Equipment CME 55 w/ autohammer

Station MLS 18+09.45

Offset 36.61 ft Rt.

Casing HQ x 18.0

Method Wet Rotary

Northing 699506.314

Easting 1143287.759

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the SW 1/4

Section 12

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
											Top surface 0.2' of ASPHALT		
1											0.2' to 3.5' well graded GRAVEL with sand as indicated by drilling and wash return. (Fill material). 100% drilling fluid return.		
5							5 7 12 (19)	D-1	GS MC		SP, MC=12% Poorly graded SAND with gravel, medium dense, dark brown, moist, Stratified, no HCl reaction, gravel is subrounded with a trace of silt, sand is clean. Length Recovered 1.5 ft, Length Retained 1.0 ft		
2													
10							5 5 13 (18)	D-2			Poorly graded SAND with gravel, medium dense, dark brown, moist, Homogeneous, no HCl reaction, traces of some coarser size grains. (Fill material). Length Recovered 1.3 ft, Length Retained 1.0 ft		
3													
4													
15							40 49 50/3 (99/9")	D-3	GS MC		SP-SM, MC=8% Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, loosely bonded together with a fine grained silt matrix. (100% drilling fluid return). Length Recovered 1.2 ft, Length Retained 1.0 ft End of test hole boring at 14.7 ft below ground elevation.		
5													
6											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:17 A3



LOG OF TEST BORING

Start Card S 14937

Job No. XL-1200 SR 16 Elevation 296.9 ft (90.5 m)

HOLE No. MLN-6-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 10, 2003 Completion July 10, 2003 Well ID# _____ Equipment CME 55 w/ autohammer

Station MLS 17+16.58 Offset 38.58ft Rt. Casing HQ x 20.0' Method Wet Rotary

Northing 699413.444 Easting 1143286.053 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the SW 1/4 Section 12 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							2		D-1	GS	Top surface 0.2' of ASPHALT.		
5							10			MC	0.2' to 3.5' silty GRAVEL with sand as indicated by drilling and wash return. (Fill material). 100% drilling fluid return, with sand as indicated by drilling and wash return. (Fill material).		
2							13				SM, MC=11%		
							(23)				Silty SAND with gravel, medium dense, medium light gray, moist, Homogeneous, no HCl reaction		
											Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							5		D-2	GS	GW, MC=11%		
							7			MC	Well graded GRAVEL with sand, subrounded, medium dense, dark brown, moist, Homogeneous, no HCl reaction, (Fill material).		
							9				Length Recovered 0.5 ft, Length Retained 0.5 ft		
15							27		D-3	GS	SM, MC=13%		
							30			MC	Silty SAND, very dense, light olive gray, moist, Homogeneous, no HCl reaction, (Ended and abandoned test hole at -15.0' below parking lot elevation, dry hole).		
							36				Length Recovered 1.5 ft, Length Retained 1.0 ft		
							(66)						
5											End of test hole boring at 15 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card R 62148

Job No. XL-1200

SR 16

Elevation 327.0 ft (99.7 m)

HOLE No. NCRS-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller James Fetterly Lic# 2507

Site Address _____

Inspector Cleo Andrews

Start August 20, 2003

Completion August 20, 2003

Well ID# AHP 407

Equipment CME 850 w/ autohammer

Station NCR 34+32.92

Offset 38 ft Lt

Casing HWT x 30.0'

Method Wet Rotary

Northing _____

Easting _____

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the SW 1/4

Section 7

Range 3 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1											Top surface tall grass.		
5							21 50/6 (50/6")	D-1		GS MC	SM, MC=9% Silty SAND with gravel, dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							36 50/3 (50/3")	D-2		GS MC	SM, MC=9% Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Note changed at 13.0' to poorly graded Sand with gravel as indicated by drilling and wash return). Length Recovered 0.7 ft, Length Retained 0.7 ft		
15							>> 21 33 47 (80)	D-3		GS MC	SP-SM, MC=13% Poorly graded SAND with silt, very dense, dark brown, moist, Homogeneous, no HCl reaction, (Note got in to some coarser gravel at 16.0' as indicated by drilling). Length Recovered 1.5 ft, Length Retained 1.0 ft		
20							>> 87/6 (87/6")	D-4		GS MC	GP, MC=11% Poorly graded GRAVEL with sand, subangular, very dense,		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:21 A3



LOG OF TEST BORING

Start Card R 62148

Job No. XL-1200 SR 16

Elevation 327.0 ft (99.7 m)

HOLE No. NCRS-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller James Fetterly Lic# 2507

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7											olive gray, moist, Homogeneous, no HCl reaction, (Till material). Started drilling very hard at 18.5', 100% drilling fluid return. Length Recovered 0.5 ft, Length Retained 0.5 ft 08/20/2003		
25							12 21 28 (49)	D-5		GS MC	SP-SM, MC=21% Poorly graded SAND with silt, dense, dark brown, moist, Homogeneous, no HCl reaction, loosely bonded together with a very fine grained silt matrix. Bailed hole water stabilized in casing at 20.9'. Length Recovered 1.5 ft, Length Retained 1.0 ft		
8											End of test hole boring at 25.5 ft below ground elevation.		
9											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14914

Job No. XL-1200

SR 16

Elevation 341.9 ft (104.2 m)

HOLE No. OEN-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 3, 2003

Completion June 3, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station PED2 96+61.92

Offset 3.31ft Rt.

Casing HW 4.5"/HQ 3.5"

Method Wet Rotary

Northing 704009.901

Easting 1142156.977

Latitude _____

Longitude _____

County Pierce

Subsection SE 1/4 of the SE 1/4

Section 2

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							3 4 3 (7)	D-1		GS MC	SM, MC=39% Silty SAND with gravel, loose, light brown, moist, Homogeneous, no HCl reaction, trace of organics 2.5-3.0' Length Recovered 1.2 ft, Length Retained 1.2 ft		
5							>> 24 50/6 (50/6")	D-2		GS MC	SM, MC=15% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as inciated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							50/5 (50/5")	D-3			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
15							50/6 (50/6")	D-4			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as inciated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
20													

06/03/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:24 A3



LOG OF TEST BORING

Start Card S14914

Job No. XL-1200 SR 16

Elevation 341.9 ft (104.2 m)

HOLE No. OEN-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							50/5 (50/5")	◆	D-5		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft		
25							>> 58/6 (58/6")	◆	D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 25.5 ft below ground elevation.		
8													
9													
30													
10													
35													
11													
12													
40													
13													
45													

This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14914

Job No. XL-1200

SR 16

Elevation 352.9 ft (107.6 m)

HOLE No. OEN-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 3, 2003

Completion June 3, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station PED2 99+01.02

Offset 7.75 ft Rt.

Casing HW 4.5"/HQ3.5"

Method Wet Rotary

Northing 704104.671

Easting 1141942.877

Latitude _____

Longitude _____

County Pierce

Subsection SE 1/4 of SE 1/4

Section 2

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							1 2 3 (5)	D-1		GS MC	SM, MC=13% Silty SAND with gravel, loose, light brown, dry, Homogeneous, no HCl reaction, trace of organics - roots Length Recovered 1.2 ft, Length Retained 1.2 ft		
5							30 50/6 (50/6")	D-2		GS MC	SM, MC=12% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							>> 55/6 (55/6")	D-3			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
15							>> 60/5 (60/5")	D-4			Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.4 ft, Length Retained 0.4 ft		
20													

06/03/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:26 A3



LOG OF TEST BORING

Start Card S14914

Job No. XL-1200

SR 16

Elevation 352.9 ft (107.6 m)

HOLE No. OEN-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							49 50/3 (50/3")	▲	D-5		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.7 ft, Length Retained 0.7 ft		
7													
25							>> 65/6 (65/6")	▲	D-6	GS MC	SM, MC=13% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
8													
30							>> 65/6 (65/6")	▲	D-7	GS MC	SM, MC=22% Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
9													
10													
35							>> 68/6 (68/6")	▲	D-8	GS MC	SM, MC=13% Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 35.5 ft below ground elevation.		
11											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14914

Job No. XL-1200

SR 16

Elevation 355.1 ft (108.2 m)

HOLE No. OEN-3-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 4, 2003

Completion June 4, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station PED2 102+65.16

Offset 12.30ft Rt.

Casing HW 4.5"/HQ 3.5"

Method Wet Rotary

Northing 704380.258

Easting 1141709.908

Latitude _____

Longitude _____

County Pierce

Subsection SE 1/4 of the SE 1/4

Section 2

Range 2 EWM

Township 30N

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:59:29 A3

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							3 4 3 (7)	D-1		GS MC	SM, MC=11% Silty SAND with gravel, loose, gray, dry, Homogeneous, no HCl reaction, trace of organics 2.5 - 3.0' Length Recovered 1.1 ft, Length Retained 1.1 ft		
5							38 50/6 (50/6")	D-2		GS MC	SM, MC=15% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							>> 40 55/6 (55/6")	D-3		GS MC	SM, MC=10% Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
15							>> 56/6 (56/6")	D-4			Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
20													

06/04/2003



LOG OF TEST BORING

Start Card S14914

Job No. XL-1200

SR

16

Elevation 355.1 ft (108.2 m)

HOLE No. OEN-3-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							33 50/6 (50/6")	▲	D-5	GS MC	SP, MC=10% Poorly graded SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
25							32 50/3 (50/3")	▲	D-6		Poorly graded SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.8 ft, Length Retained 0.8 ft		
30							>> 58/6 (58/6")	▲	D-7		Poorly graded SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft		
35							>> 69/6 (69/6")	▲	D-8	GS MC	SM, MC=9% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 35.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
40													
45													



LOG OF TEST BORING

Start Card S 14919

Job No. XL-1200

SR 16

Elevation 328.6 ft (100.2 m)

HOLE No. OWS-1-03

Sheet 1 of 3

Project Union Ave to Jackson Ave.

Driller Cooper Lic# 2552

Site Address _____

Inspector Hanning

Start July 23, 2003

Completion July 24, 2003

Well ID# _____

Equipment CME 45 w/ autohammer

Station OWS 18+08.60

Offset 48.82ft Rt.

Casing HQ 3.5"

Method Wet Rotary

Northing 701514.903

Easting 1143062.78

Latitude _____

Longitude _____

County Pierce

Subsection NW/NW

Section 12

Range 2E

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
				5 13 11 (24)	D-1	GS MC		GP-GM, MC=2% Poorly graded GRAVEL with silt and sand, root hairs, rounded, medium dense, light brown, dry, Homogeneous, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
1				6 14 23 (37)	D-2	GS MC		SM, MC=11% Silty SAND with gravel, medium dense, olive brown, moist, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
5										
2										
				12 15 43 (58)	D-3	GS MC		SP-SM, MC=9% Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
10										
3										
				23 25 19 (44)	D-4	GS MC		SP-SM, MC=8% Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.6 ft, Length Retained 0.6 ft		
4										
15										
5										
				30 28 27 (55)	D-5			Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
6										
20										

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:59:32 A3



LOG OF TEST BORING

Start Card S 14919

Job No. XL-1200 SR 16

Elevation 328.6 ft (100.2 m)

HOLE No. OWS-1-03

Sheet 2 of 3

Project Union Ave to Jackson Ave.

Driller Cooper

Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							>> 34 37 26 (63)	D-6			Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft 07/23/2003	▽	
25							>> 60/5 (60/5")	D-7		GS MC	SP, MC=12% Poorly graded SAND with gravel, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
8							29 50/3" (50/3")	D-8		GS MC	SP, MC=16% Poorly graded SAND with gravel, very dense, grayish brown, wet, Stratified, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft 07/24/2003	▼	
30							>> 60/6 (60/6")	D-9			Poorly graded SAND with gravel, very dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft		
9							35 19 23 (42)	D-10		GS MC	SP, MC=24% Poorly graded SAND, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
35							>>						
11													
12													
40													
13													
45							>>						



LOG OF TEST BORING

Start Card S 14919

Job No. XL-1200

SR 16

Elevation 328.6 ft (100.2 m)

HOLE No. OWS-1-03

Sheet 3 of 3

Project Union Ave to Jackson Ave.

Driller Cooper

Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14							53/6 (53/6")	✖	D-11		Poorly graded SAND, very dense, olive gray, moist, Stratified, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 45.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
50													
15													
16													
55													
17													
18													
60													
19													
65													
20													
21													
70													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 14919

Job No. XL-1200 SR 16 Elevation 309.0 ft (94.2 m)

HOLE No. OWS-2-03

Sheet 1 of 3

Project Union Ave to Jackson Ave.

Driller Cooper Lic# 2552

Site Address _____

Inspector Hanning

Start July 22, 2003 Completion July 23, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station OWS 20+57.24 Offset 0.23ft Lt. Casing HQ 3.5" Method Wet Rotary

Northing 701315.926 Easting 1143218.884 Latitude _____ Longitude _____

County Pierce Subsection NW/NW Section 12 Range 2E Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1				20			3 11 8 (19)	D-1		GS MC	SM, MC=5% Silty SAND with gravel and organics, medium dense, light brown, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
5							10 18 48 (66)	D-2		GS MC	SP-SM, MC=9% Poorly graded SAND with silt and gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.2 ft		
10							36 50/2" (50/2")	D-3			Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
15							70/6 (70/6")	D-4		GS MC	SM, MC=8% Silty SAND with gravel, very dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft		
20							70/6 (70/6")	D-5		GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, very dense, grayish		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:36 A3



LOG OF TEST BORING

Start Card S 14919

Job No. XL-1200

SR 16

Elevation 309.0 ft (94.2 m)

HOLE No. OWS-2-03

Sheet 2 of 3

Project Union Ave to Jackson Ave.

Driller Cooper

Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
											brown, moist, Stratified, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
7													
25							>> 70/5 (70/5")	✕	D-6		Poorly graded SAND with silt and gravel, very dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
8													
30							>> 70/6 (70/6")	✕	D-7		Poorly graded SAND with silt and gravel, very dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
9													
35							>> 70/4" (70/3")	✕	D-8		Poorly graded SAND with silt and gravel, very dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 0.2 ft, Length Retained 0.2 ft		
10													
40							>> 70/6 (70/6")	✕	D-9		Poorly graded SAND with silt and gravel, very dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
11													
45							50/0" (50/0")		D-10		No Recovery		
							>>						

SOIL_XL1200_SR16_UNION_AVE_TO_JACKSON_AVE.GPJ SOIL_GDT 3/15/04,10:59:36 A3



LOG OF TEST BORING

Start Card S 14919

Job No. XL-1200 SR 16

Elevation 309.0 ft (94.2 m)

HOLE No. OWS-2-03

Sheet 3 of 3

Project Union Ave to Jackson Ave.

Driller Cooper Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14							70/5" (70/5")	✖	D-11		Poorly graded SAND with silt and gravel, very dense, grayish brown, moist, Stratified, no HCl reaction, Bailed hole, no water. Length Recovered 0.4 ft, Length Retained 0.4 ft End of test hole boring at 45.5 ft below ground elevation.		
15													
50													
16													
55													
17													
18													
60													
19													
65													
20													
21													
70													

This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23807

Job No. XL-1200 SR 16 Elevation 298.0 ft (90.8 m)

HOLE No. PEDW-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Vince Johnson

Start August 12, 2003 Completion August 12, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station PED2 69+45.90 Offset 11.20ft Lt. Casing hq Method Wet Rotary

Northing 701954.334 Easting 1143135.489 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 NW 1/4 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							18 22 28 (50)	D-1		GS MC	SM, MC=4% Silty SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
5							4 4 7 (11)	D-2		GS MC	SM, MC=9% Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.9 ft, Length Retained 0.9 ft		
10							1 0 1 (1)	D-3		GS MC	SM, MC=12% Silty SAND with gravel, very loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.7 ft, Length Retained 0.7 ft		
15							15 17 26 (43)	D-4		GS MC	SM, MC=12% Silty SAND, dense, gray, moist, Laminated, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.0 ft		
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:59:39 A3



LOG OF TEST BORING

Start Card S 23807

Job No. XL-1200 SR 16

Elevation 298.0 ft (90.8 m)

HOLE No. PEDW-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo

Lic# 2615

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							16 11 20 (31)		D-5		Silty SAND, dense, brownish gray, moist, Laminated, no HCl reaction, No recovery with standard SPT, recovered with oversize SPT Length Recovered 0.5 ft, Length Retained 0.2 ft		
7													
25													
8													
9													
30													
10													
35													
11													
12													
40													
13													
45													

End of test hole boring at 21.5 ft below ground elevation.

This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23807

Job No. XL-1200

SR 16

Elevation 315.0 ft (96.0 m)

HOLE No. PEDW-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Vince Johnson

Start August 13, 2003 Completion August 13, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station PED2 71+45.38 Offset 10.89 ft Lt. Casing hq Method Wet Rotary

Northing 702136.149 Easting 1143053.418 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 NW 1/4 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							18 25 24 (49)	D-1		GS MC	SM, MC=5% Silty SAND with gravel, dense, brownish gray, moist, Homogeneous, no HCl reaction Length Recovered 1.4 ft, Length Retained 1.0 ft		
5							22 24 14 (38)	D-2		GS MC	SM, MC=8% Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.0 ft		
10							13 13 7 (20)	D-3			Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 0.7 ft		
15							13 12 12 (24)	D-4			Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.1 ft, Length Retained 1.0 ft		
20													

08/13/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:41 A3



LOG OF TEST BORING

Start Card S 23807

Job No. XL-1200

SR 16

Elevation 315.0 ft (96.0 m)

HOLE No. PEDW-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo

Lic# 2615

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40	13 3 3 (6)	▲	D-5		Silty SAND with gravel, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.6 ft, Length Retained 0.6 ft		
7										
25				9 14 11 (25)	▲	D-6		Silty SAND with gravel, loose, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
8										
				5 4 9 (13)	▲	D-7		Silty SAND with gravel, medium dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
9										
30								End of test hole boring at 29 ft below ground elevation.		
								This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
10										
35										
11										
40										
12										
45										
13										



LOG OF TEST BORING

Start Card S 23807

Job No. XL-1200

SR 16

Elevation 329.2 ft (100.3 m)

HOLE No. PEDW-3-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Site Address _____

Inspector Donny Henderson

Start August 14, 2003

Completion August 14, 2003

Well ID# _____

Equipment CME 45 w/ autohammer

Station PED2 73+43.39

Offset 12.31ft Lt.

Casing HQ x 40.0'

Method Wet Rotary

Northing 702319.147

Easting 1142972.251

Latitude _____

Longitude _____

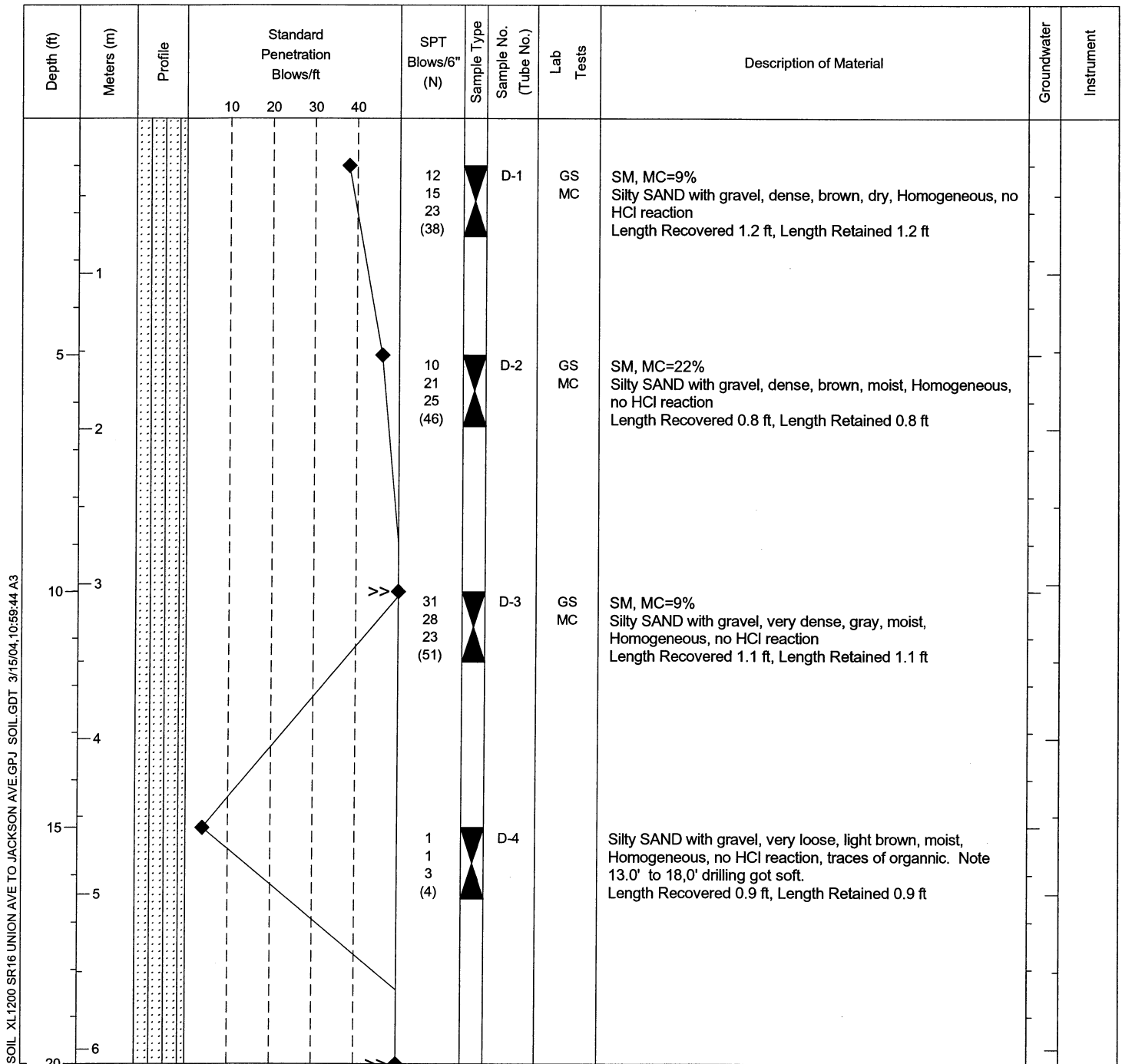
County Pierce

Subsection NW 1/4 of the NW 1/4

Section 12

Range 2 EWM

Township 20 N





LOG OF TEST BORING

Start Card S 23807

Job No. XL-1200 SR 16

Elevation 329.2 ft (100.3 m)

HOLE No. PEDW-3-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2615

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							>> 24 30 41 (71)	▲	D-5		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, some cobbles as indicated by drilling. Length Recovered 1.1 ft, Length Retained 1.1 ft		
7													
25							20 22 28 (50)	▲	D-6		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, cobbles as indicated by drilling. Length Recovered 0.6 ft, Length Retained 0.6 ft		
8													
30							>> 24 35 32 (67)	▲	D-7		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, some cobbles as indicated by drilling. Length Recovered 1.5 ft, Length Retained 1.5 ft		
9													
10													
35							>> 24 30 45 (70)	▲	D-8		Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, some cobbles as indicated by drilling. Bail test done 30.0', recharged 30.0'. (Dry hole). Length Recovered 1.3 ft, Length Retained 1.3 ft		
11													
											End of test hole boring at 36.5 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-23812

Job No. XL-1200

SR 16

Elevation 350.0 ft (106.7 m)

HOLE No. PEW-1-03

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dave Nelson

Start August 20, 2003 Completion August 20, 2003 Well ID# _____ Equipment BK-81 w/ autohammer

Station Pearl St. 24+50 Offset 100 ft Rt Casing 3.5 x 8.5 Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection SE 1/4 of SW 1/4 Section 35 Range 2 EWM Township 21 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
1				2 10 39 (49)	D-1		GS MC	SP-SM, MC=4% Poorly graded SAND with silt, dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
5				20 27 16 (43)	D-2		GS MC	SM, MC=10% Silty SAND with gravel, dense, light grey, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
10				16 20 29 (49)	D-3			Silty SAND with gravel, dense, light grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
15								End of test hole boring at 10 ft below ground elevation.		
20								This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:47 A3



LOG OF TEST BORING

Start Card S-23813

Job No. XL-1200 SR 16 Elevation 350.0 ft (106.7 m)

HOLE No. PEW-2-02

Sheet 1 of 1

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dave Nelson

Start August 20, 2003 Completion August 20, 2003 Well ID# _____ Equipment BK-81 w/ autohammer

Station Pearl St. 24+20 Offset 110 ft Lt Casing 3.5 x 11.0 Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection SW 1/4 of SE 1/4 Section 35 Range 2 EWM Township 21 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							4 12 23 (35)	▲	D-1	GS MC	SM, MC=4% Silty SAND with gravel, dense, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
1							>> 15 25 35 (60)	▲	D-2		Silty SAND with gravel, very dense, light grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
5							17 50/6 (50/6")	▲	D-3		Silty SAND with gravel, very dense, light grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
2													
10													
3							>> 39 31 40 (71)	▲	D-4	GS MC	SP-SM, MC=9% Poorly graded SAND with silt and gravel, very dense, light grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
4													
15											End of test hole boring at 12.5 ft below ground elevation.		
5											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
6													
20													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23814

Job No. XL-1200

SR 16

Elevation 326.0 ft (99.4 m)

HOLE No. PH-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller James Fetterly Lic# 2507

Site Address _____

Inspector Cleo Andrews

Start August 20, 2003

Completion August 20, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station BP5 55+76.60

Offset 100.63 ft Lt.

Casing HQ x 40.0'

Method Wet Rotary

Northing _____

Easting _____

Latitude _____

Longitude _____

County Pierce

Subsection NE 1/4 of the SE 1/4

Section 2

Range 2 EWM

Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1											Top surface trees with thorns, dense brush.		
5							3 2 1 (3)	D-1		GS MC	SM, MC=11% Silty SAND with gravel, traces of root hairs, very loose, brown, dry, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							>> 100/5 (100/5")	D-2		GS MC	SM, MC=14% Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Note very hard drilling from 9.0' to 14.0'). Length Recovered 0.4 ft, Length Retained 0.4 ft		
15							>> 41 67/6 (67/6")	D-3		GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). 100% drilling fluid return. Length Recovered 1.0 ft, Length Retained 1.0 ft		
20							>> 12 23	D-4			Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Note sand with		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04 10:59:50 A3



LOG OF TEST BORING

Start Card S 23814

Job No. XL-1200 SR 16

Elevation 326.0 ft (99.4 m)

HOLE No. PH-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller James Fetterly Lic# 2507

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							32 (55)	◆			some coarser gravel as indicated by drilling at 21.5'). Length Recovered 1.2 ft, Length Retained 1.0 ft		
7													
25							14 31 28 (59)	◆	D-5	GS MC	SP-SM, MC=11% Poorly graded SAND with silt and gravel, very dense, olive gray, moist, Laminated, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.0 ft		
8													
30							18 28 21 (39)	◆	D-6		Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction, laminated with fine grained sand lens and partings. Length Recovered 1.5 ft, Length Retained 1.0 ft		
9													
10													
35							10 15 17 (32)	◆	D-7	GS MC	SM, MC=15% Silty SAND, dense, olive gray, moist, Stratified, no HCl reaction, laminated with fine grained sand lens. Length Recovered 1.5 ft, Length Retained 1.0 ft		
11											End of test hole boring at 35.5 ft below ground elevation.		
											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
12													
40													
13													
45													

LOG OF TEST BORING

Start Card R 62150

Job No. XL-1200 SR 16 Elevation 316.7 ft (96.5 m)

HOLE No. PH-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller James Fetterly Lic# 2507

Site Address _____

Inspector Cleo Andrews

Start August 21, 2003 Completion August 21, 2003 Well ID# AHP 407 Equipment CME 850 w/ autohammer

Station BP5 57+16.72 Offset 93.72ft Lt. Casing HWT x 37.0' Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection NE 1/4 of the SE 1/4 Section 2 Range 2 EWM Township 20 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
0											Top surface grass and weeds. 0.0' to 3.0' silty Gravel with sand and scattered cobbles as indicated by drilling and wash return. 100% drilling fluid return. (Note change at 7.0' no cobbles indicated from drilling).		
1							2	2	D-1	GS MC	SP-SM, MC=17% Poorly graded SAND with silt and gravel, medium dense, brown, moist, Stratified, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
5							10	10					
2													
3							23	21	D-2	GS MC	SM, MC=11% Silty SAND with gravel, dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
10							21	21					
4							13	19	D-3	GS MC	SM, MC=10% Silty SAND with gravel, dense, olive gray, moist, Homogeneous, no HCl reaction, (Note encountered some coarser gravel at 15.5'). Length Recovered 1.5 ft, Length Retained 1.0 ft		
15							19	19					
5													
6							11	21	D-4		Silty SAND with gravel, dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). 100% drilling fluid return Length Recovered 1.5 ft, Length Retained 1.0 ft		
20							19	19					
							(40)						



LOG OF TEST BORING

Start Card R 62150

Job No. XL-1200 SR 16

Elevation 316.7 ft (96.5 m)

HOLE No. PH-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller James Fetterly Lic# 2507

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							10	▲	D-5		Silty SAND with gravel, dense, olive gray, moist, Laminated, no HCl reaction, (Note approximately 25% drilling fluid loss starting at 25.0'). Encountered some coarser gravel through out soil strata. Length Recovered 1.0 ft, Length Retained 1.0 ft 08/21/2003		
25							13	▲					
							22	▲					
							(35)						
8											Silty SAND with gravel, medium dense, olive gray, moist, Homogeneous, no HCl reaction, (Note 15 to 25% drilling fluid loss). Length Recovered 1.2 ft, Length Retained 1.0 ft		
							10	▲	D-6				
							11	▲					
9							10	▲					
							(21)						
30											Silty SAND with gravel, dense, olive gray, moist, Homogeneous, no HCl reaction, traces of brownish orange stains. Very little drilling fluid loss from 31.0' to 33.0'. Length Recovered 1.7 ft, Length Retained 1.0 ft		
							9	▲	D-7				
							9	▲					
							38	▲					
							60	▲					
							(47)						
35											End of test hole boring at 35 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. Bailed hole water table at 27.0'. Installed piezo well, bailed out piezo waited 15 minutes water table stabilized at 23.3', 8-21-03.		
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 14939

Job No. XL-1200

SR 16

Elevation 370.2 ft (112.8 m)

HOLE No. PL-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 16, 2003

Completion July 17, 2003

Well ID# _____

Equipment CME 55 w/ autohammer

Station 6PL 12+47.41

Offset 26.41 ft Rt.

Casing HQ x 43.0'

Method Wet Rotary

Northing 707565.914

Easting 1140542.742

Latitude _____

Longitude _____

County Pierce

Subsection SW 1/4 of the SE 1/4

Section 35

Range 2 EWM

Township 21 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							5 4 4 (8)	D-1		GS MC	0.0' to 2.5' silty Gravel with sand as indicated by drilling and wash return. 100% drilling fluid return.. SM, M.C.=21% Silty SAND with gravel, subrounded, loose, dark brown, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft		
5													
2							3 3 3 (6)	D-2		GS MC	SP-SM, M.C.=12% Poorly graded SAND with silt and gravel, subrounded, loose, dark brown, moist, Homogeneous, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
10													
3													
4							3 3 2 (5)	D-3		GS MC	SP-SM, M.C.=11% Poorly graded SAND with silt, gravel and organics, subrounded, very loose, dark brown, moist, homogeneous, no HCl reaction, (Note sandy organic soil is mixed with wood twigs and root hairs). 100% drilling fluid return. Length Recovered 1.0 ft, Length Retained 1.0 ft		
15													
5													
6							3 3 2 (5)	D-4		GS MC	SM, M.C.=21% Silty SAND with gravel and organics, loose, dark brown, moist, Stratified, no HCl reaction, (Note sandy organic soil is mixed with wood twigs and root hairs). 100% drilling fluid return. Length Recovered 1.0 ft, Length Retained 1.0 ft		
20													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,10:59:56 A3



LOG OF TEST BORING

Start Card S 14939

Job No. XL-1200 SR 16

Elevation 370.2 ft (112.8 m)

HOLE No. PL-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Vince johnson Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
7				5 4 5 (9)	D-5		GS MC	SM, M.C.=20% Silty SAND with gravel, with wood debri, subrounded, loose, dark brown, moist, Stratified, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft		
25									7/23/03 7/17/03	
8				9 15 33 (48)	D-6		GS MC	SM, M.C.=13% Silty SAND with gravel, subrounded, dense, olive gray, moist, Stratified, no HCl reaction, (Note silty Sand is laminated with sandy organic soil lenses black in color, traces of brownish stains. 100% drilling fluid Length Recovered 1.0 ft, Length Retained 1.0 ft		
9										
30										
10				>> 100/6 (100/6")	D-7			Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, traces of brown stains. (Till material). Length Recovered 0.5 ft, Length Retained 0.5 ft		
35										
11										
				>> 75/6 (75/6")	D-8			Silty SAND with gravel, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). 100% drilling fluid return. Length Recovered 0.5 ft, Length Retained 0.5 ft End of test hole boring at 38 ft below ground elevation.		
12								This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
40								Water table stabilized in hole after bailing and 1 hour waiting period to -25.7' below ground level. 7-17-03.		
13										
45										



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card R62146

Job No. XL-1200

SR 16

Elevation 372.3 ft (113.5 m)

HOLE No. PL-2-03

Sheet 1 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Site Address _____

Inspector Cleo Andrews

Start July 15, 2003

Completion July 16, 2003

Well ID# AHP 406

Equipment CME 55 w/ autohammer

Station 6PL 14+66.11

Offset 60.58ft Rt.

Casing HQ x 53.0'

Method Wet Rotary

Northing 707784.565

Easting 1140480.226

Latitude _____

Longitude _____

County Pierce

Subsection SW 1/4 of the SE 1/4

Section 35

Range 2 EWM

Township 21 N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1											0.0' to 3.5' silty Gravel with sand as indicated by drilling and wash return. 100% drilling fluid return.		
5							1 3 5 (8)	D-1		GS MC	SM, M.C.=20% Silty SAND with gravel, subrounded, loose, brown, moist, Homogeneous, no HCl reaction, traces of organic. Length Recovered 0.5 ft, Length Retained 0.5 ft		
10							1 1 3 (4)	D-2			Silty Sand with gravel, organics and decayed wood, subrounded, very loose, brown, moist, Stratified, no HCl reaction, (organic soil with decayed wood particles are black in color). Length Recovered 0.7 ft, Length Retained 0.7 ft		
15							1 3 1 (4)	D-3		GS MC	SM, M.C.=26% Silty Sand with gravel, organics and wood particles, subrounded, very loose, dark brown, moist, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
20							4 3 4 (7)	D-4		GS MC	SM, M.C.=14% Silty SAND with gavel, subrounded, loose, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 0.6 ft, Length Retained 0.6 ft		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04, 10:59:59 A3



LOG OF TEST BORING

Start Card R62146

Job No. XL-1200

SR 16

Elevation 372.3 ft (113.5 m)

HOLE No. PL-2-03

Sheet 2 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7													
25							3 2 3 (5)	D-5		GS MC	SM, M.C.=26% Silty SAND with gravel and organics, subrounded, loose, dark brown, wet, Stratified, no HCl reaction, (Organic soil is black in color). Very little drilling fluid loss starting at 23.5'. Length Recovered 0.5 ft, Length Retained 0.5 ft		
8													
30							4 4 13 (17)	D-6		GS MC	SP-SM, M.C.=19% Poorly graded SAND with silt, medium dense, olive gray, moist, Stratified, no HCl reaction, (Changed at 29.8' to 30.0'). traces of organic. Length Recovered 1.2 ft, Length Retained 1.0 ft		
10													
35							>> 31 31 40 (71)	D-7			Poorly graded SAND with silt, subrounded, very dense, olive gray, moist, Stratified, no HCl reaction, laminated with fine grained sand lenses. Length Recovered 1.5 ft, Length Retained 1.0 ft		
11													
40							>> 100/11 (100/11")	D-8			Poorly graded SAND with silt, subrounded, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). Very little drilling fluid loss. Length Recovered 0.4 ft, Length Retained 0.4 ft		
12													
45							>> 100/3 (100/3")	D-9			Poorly graded SAND with silt, subrounded, very dense, olive gray, moist, Homogeneous, no HCl reaction, traces of yellow stains. (Till material). Length Recovered 0.2 ft, Length Retained 0.2 ft		
13													



LOG OF TEST BORING

Start Card R62146

Job No. XL-1200

SR 16

Elevation 372.3 ft (113.5 m)

HOLE No. PL-2-03

Sheet 3 of 3

Project Union Ave to Jackson Ave.

Driller Vince Johnson

Lic# 2532

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14													
15							>> 100/5 (100/5")	✕	D-10		Silty GRAVEL with sand, subrounded, very dense, olive gray, moist, Homogeneous, no HCl reaction, (Till material). Length Recovered 0.3 ft, Length Retained 0.3 ft End of test hole boring at 48.9 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
50													
16													
55													
17													
18													
60													
19													
65													
20													
21													
70													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S14917

Job No. XL-1200 SR 16 Elevation 363.8 ft (110.9 m)

HOLE No. PL-3-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 2, 2003 Completion June 2, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 6PL 17+49.73 Offset 63.78ft Lt. Casing HW 4.5"/HQ3.5" Method Wet Rotary

Northing 707969.398 Easting 1140230.446 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the NE 1/4 Section 2 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							18 19 19 (38)	D-1		GS MC	SP-SM, MC=9% Poorly graded SAND with silt and gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							30 32 35 (67)	D-2			Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							17 26 31 (57)	D-3			Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
15							16 24 30 (54)	D-4			Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
20													

06/02/2003

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,11:00:02 A3



LOG OF TEST BORING

Start Card S14917

Job No. XL-1200

SR 16

Elevation 363.8 ft (110.9 m)

HOLE No. PL-3-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
7							18 26 35 (61)	D-5		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
25							34 50/6 (50/6")	D-6		Poorly graded SAND with silt and gravel, very dense, gray, moist, Stratified, no HCl reaction, w/cobbles as indicated by drilling process soil color change 25.0-25.5' gray to dark brown Length Recovered 1.0 ft, Length Retained 1.0 ft		
30							38 50/4 (50/4")	D-7	GS MC	SM, MC=13% Silty SAND with gravel, dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.0 ft, Length Retained 1.0 ft		
10										End of test hole boring at 31 ft below ground elevation.		
35										This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
11												
12												
40												
13												
45												



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card R62135

Job No. XL-1200 SR 16

Elevation 355.4 ft (108.3 m)

HOLE No. PL-4-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start June 2, 2003 Completion June 2, 2003 Well ID# AGS790 Equipment CME 850 w/ autohammer

Station 6PL 20+30.48 Offset 55.02ft Lt. Casing HW 4.5"/HQ 3.5" Method Wet Rotary

Northing 708213.682 Easting 1140099.049 Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the NE 1/4 Section 2 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							>> 22		D-1	GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							>> 28		D-2		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
2							26 30 (56)						
10							>> 19		D-3		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
3							28 30 (58)						
4													
15							>> 25		D-4		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/silt Length Recovered 1.5 ft, Length Retained 1.5 ft		
5							28 31 (59)						
6													
20							>>						

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,11:00:05 A3



LOG OF TEST BORING

Start Card R62135

Job No. XL-1200

SR 16

Elevation 355.4 ft (108.3 m)

HOLE No. PL-4-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Joe Judd

Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							29 31 40 (71)		D-5		Poorly graded SAND with silt and gravel, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process Length Recovered 1.5 ft, Length Retained 1.5 ft		
7											End of test hole boring at 21.5 ft below ground elevation.		
25											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
8													
9													
30													
10													
35													
11													
12													
40													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card R-62149

Job No. XL-1200 SR 16 Elevation 371.9 ft (113.4 m)

HOLE No. PL-5-03

Sheet 1 of 3

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2517

Site Address _____

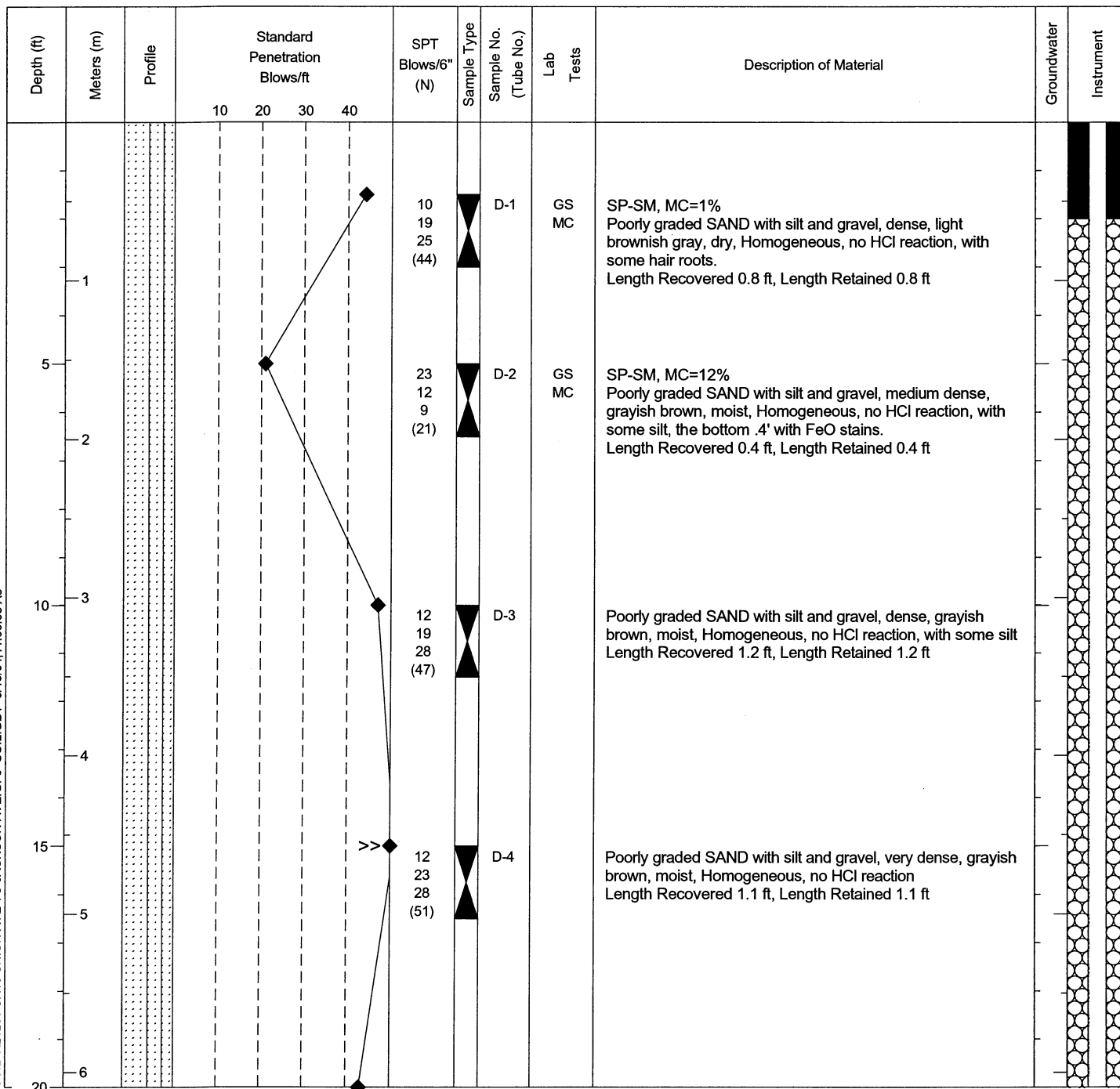
Inspector Brian Hilts

Start August 19, 2003 Completion August 20, 2003 Well ID# AHP-408 Equipment CME 45 w/ cathead

Station 6PL 14+99.59 Offset 75.16ft Lt. Casing 4"x57" Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection NW1/4 NE1/4 Section 2 Range 2 EWM Township 20N





LOG OF TEST BORING

Start Card R-62149

Job No. XL-1200

SR 16

Elevation 371.9 ft (113.4 m)

HOLE No. PL-5-03

Sheet 2 of 3

Project Union Ave to Jackson Ave.

Driller Sean Verlo

Lic# 2517

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							13 16 27 (43)	D-5			Poorly graded SAND with silt and gravel, dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.2 ft		
7													
25							11 27 46 (73)	D-6		GS MC	SM, MC=12% Silty SAND with gravel, very dense, gray, moist, Stratified, no HCl reaction, (25.5' to 25.9') silty fine sand brown with a trace of black organics, hair roots, and FeO stains. Length Recovered 1.3 ft, Length Retained 1.3 ft		
8													
30							13 13 14 (27)	D-7		GS MC	SM, MC=19% Silty SAND with gravel, dense, gray and very dark brown, moist, Stratified, no HCl reaction, top .3' very dark brown with FeO stains and black organics, Length Recovered 1.2 ft, Length Retained 1.2 ft SP-SM, MC=12% Interbedded @ 0.5' layer of Poorly graded SAND with silt and gravel. (Sample designated as D-7A) Silty SAND with gravel, dense, very dark brown, wet. (Relic. top soil)		
9													
10													
35							10 20 20 (40)	D-8		GS MC	SP-SM, MC=14% Poorly graded SAND with silt and gravel, dense, grayish brown, moist, Homogeneous, no HCl reaction, with some FeO stains. Length Recovered 0.8 ft, Length Retained 0.8 ft		
11													
40							30 55/6" (55/6")	D-9		GS MC	SM, MC=10% Silty SAND with gravel, very dense, gray, moist, Homogeneous, no HCl reaction, mottled with light olive brown Length Recovered 0.9 ft, Length Retained 0.9 ft		
12													
13													
45													

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,11:00:08 A3



LOG OF TEST BORING

Start Card R-62149

Job No. XL-1200 SR 16

Elevation 371.9 ft (113.4 m)

HOLE No. PL-5-03

Sheet 3 of 3

Project Union Ave to Jackson Ave.

Driller Sean Verlo Lic# 2517

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14							50/5" (50/5")	◆	D-10		Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
15													
50							50/3" (50/3")	◆	D-11	GS MC	SM, MC=11% Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
16													
55							>> 100/4" (100/4")	◆	D-12		Silty SAND, very dense, gray, moist, Homogeneous, no HCl reaction, on (08/19/03 we bailed the hole to 51.8', the morning of 08/20/03 the water table inside the casing was at 54.2'.) Length Recovered 0.3 ft, Length Retained 0.3 ft End of test hole boring at 55.3 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
17													
18													
60													
19													
65													
20													
21													
70													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 23805

Job No. XL-1200

SR 16

Elevation 328.1 ft (100.0 m)

HOLE No. PNW-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave.

Driller Cooper Lic# 2552

Site Address _____

Inspector Hanning

Start July 24, 2003

Completion July 24, 2003

Well ID# _____

Equipment CME 45 w/ autohammer

Station PNW 14+96.16

Offset 21.92ft Lt.

Casing HQ 3.5"

Method Wet Rotary

Northing 706907.126

Easting 1140218.143

Latitude _____

Longitude _____

County pierce

Subsection NE/NW

Section 2

Range 2E

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
1				5 3 6 (9)	D-1		GS MC	SP, MC=1% Poorly graded SAND with gravel, and root hairs, loose, light brown, dry, Homogeneous, no HCl reaction Length Recovered 0.6 ft, Length Retained 0.6 ft		
5				7 5 6 (11)	D-2		GS MC	SP-SM, MC=8% Poorly graded SAND with silt and gravel, medium dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.7 ft, Length Retained 0.7 ft		
10				4 2 2 (4)	D-3		GS MC	SM, MC=10% Silty SAND with gravel, very loose, grayish brown, wet, Stratified, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft	▽ 07/24/2003	
15				2 1 11 (12)	D-4		GS MC	SM, MC=14% Silty SAND with gravel, medium dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
20				5	D-5		GS	SM, MC=17%		

SOIL XL1200 SR16 UNION AVE TO JACKSON AVE.GPJ SOIL.GDT 3/15/04,11:00:12 A3



LOG OF TEST BORING

Start Card S 23805

Job No. XL-1200 SR 16

Elevation 328.1 ft (100.0 m)

HOLE No. PNW-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave.

Driller Cooper Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
7							12 34 (46)	MC	MC	Silty SAND, dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.3 ft		
25							16 15 6 (21)	D-6		Silty SAND, medium dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.3 ft		
30							15 16 16 (32)	D-7	GS MC	SM, MC=14% Silty SAND, dense, grayish brown, moist, Stratified, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.3 ft		
10										End of test hole boring at 31 ft below ground elevation.		
35										This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
11												
12												
40												
13												
45												



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 340.3 ft (103.7 m)

HOLE No. H-1-80

Sheet 1 of 2

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Site Address _____

Inspector _____

Start October 20, 1980

Completion _____

Well ID# _____

Equipment _____

Station BC 178+80

Offset 14ft Lt.

Casing Auger

Method _____

Northing _____

Easting _____

Latitude _____

Longitude _____

County _____

Subsection _____

Section _____

Range _____

Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							2 29 2 3 (31)	D-1			SW-SM Dense, brown, moist, organic, slightly silty, fine to coarse SAND, fine GRAVEL and decayed wood fragments.		
5							6 4 5 7 (9)	D-2			SM Loose, light brown, slightly organic, silty, fine to coarse SAND with gravel.		
10							3 5 6 6 (11)	D-3			(D-3a) Medium dense, light brown, slightly organic, silty, fine to coarse SAND with gravel. SM (D-3b) Medium dense, light brown, moist, silty, fine to medium SAND with a trace of fine gravel.		
15							>> 20 36 40 (76)	D-4			SM Very dense, gray-brown, moist, GRAVEL in very silty, fine sand matrix with a trace of medium to coarse sand (Glacial Till).		
20							>>						

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 3/15/04 11:01:24 A3



LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16

Elevation 340.3 ft (103.7 m)

HOLE No. H-1-80

Sheet 2 of 2

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							40 100/5 (140/11")	▲	D-5		SM Very dense, light gray-brown, moist, very silty, fine to coarse SAND with gravel (Glacial Till).		
25							40 88 (128)	▲	D-6		SM Very dense, light gray-brown, moist, silty, fine to medium SAND with a trace of fine gravel (Glacial Till).		
8													
9											End of Test Hole Boring at 28 feet below ground elevation. This Boring Log was recreated from a 1980 Washington State Department of Transportation Log of Test Boring.		
30													
10													
35													
11													
40													
12													
13													
45													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 341.4 ft (104.1 m)

HOLE No. H-3-80

Sheet 1 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Site Address _____

Inspector _____

Start October 29, 1980

Completion _____

Well ID# _____

Equipment _____

Station BC 177+50

Offset 25ft Lt.

Casing Auger

Method _____

Northing _____

Easting _____

Latitude _____

Longitude _____

County _____

Subsection _____

Section _____

Range _____

Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
				5 11 17 17 (28)	D-1			Dense, gray, moist, very silty, fine to coarse SAND with gravel (Fill).		
1										
5				2 4 4 3 (8)	D-2			(D-2a) Loose, gray, moist, very silty, fine to coarse SAND with gravel and roots. SM (D-2b) Loose, dark brown, organic, very silty, fine to coarse SAND with gravel.		
2										
10				2 2 1 1 (3)	D-3			SM Very loose, dark brown and gray, highly organic, silty, moist, fine to coarse SAND with fine gravel and decayed wood fragments.		
3										
4										
15				4 4 5 6 (9)	D-4			Loose, brown, moist, silty, fine to coarse SAND with gravel.		
4										
5										
6										
20										

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 3/15/04,11:01:27 A3



Start Card _____

SR 16

Elevation 341.4 ft (104.1 m)

HOLE No. H-3-80

Sheet 2 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument	
			10	20	30	40								
7						>>	31 85 (116)	D-5			Very dense, gray, moist, GRAVEL in very silty fine sand matrix with a trace of medium to coarse sand (Glacial Till).			
						>>	22 31 50/5 (81/11")	D-6			SM Very dense, gray, moist, silty, fine to coarse SAND with gravel.			
						>>	37 40 52 (92)	D-7			Very dense, gray, moist, silty, fine to coarse SAND with gravel.			
						>>	50 75 (125)	D-8			Very dense, gray, moist, GRAVEL in very silty fine sand matrix with a trace of medium to coarse sand (Glacial Till).			
11														
12														
40						>>	27 50 50/3 (100/9")	D-9			Very dense, gray, moist, very silty, fine to coarse SAND with gravel (Glacial Till).			
13														
45						>>								

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 3/15/04,11:01:27 A3



LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 341.4 ft (104.1 m)

HOLE No. H-3-80

Sheet 3 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
14							29 55 60 (115)	D-10		No recovery (very dense).		
15												
50							29 41 65 (106)	D-11		Very dense, gray, moist, silty, fine to coarse SAND with gravel (Glacial Till).		
16										End of Test Hole Boring at 51.5 feet below ground elevation. This Boring Log was recreated from a 1980 Washington State Department of Transportation Log of Test Boring.		
55												
17												
18												
60												
19												
65												
20												
21												
70												



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200 SR 16 Elevation 368.7 ft (112.4 m)

HOLE No. TH-1-02

Sheet 1 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly Lic# 2705

Site Address _____

Inspector Dave Nelson

Start December 9, 2002 Completion December 10, 2002 Well ID# _____ Equipment CME 850 w/ auto hammer

Station A22 176+89.65 Offset 26.1ft Rt. Casing HQx60.0 Method Wet Rotary

Northing 707223.5597 Easting 1140394.633 Latitude _____ Longitude _____

County Pierce Subsection NW-NE Section 2 Range 2EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1													
5							8 11 13 (24)	D-1			Poorly graded SAND with gravel, medium dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
10							11 19 23 (42)	D-2			Poorly graded SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
15							8 12 33 (45)	D-3			Poorly graded SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
20													

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 3/15/04,11:01:30 A3



LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200

SR 16

Elevation 368.7 ft (112.4 m)

HOLE No. TH-1-02

Sheet 2 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly

Lic# 2705

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							6 15 22 (37)	D-4		GS MC	SM, MC=11% Silty SAND with gravel, dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
7													
25							11 13 11 (24)	D-5		GS MC	SM, MC=12% Silty SAND with gravel, medium dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
8													
30							5 4 12 (16)	D-6			Silty SAND with gravel, medium dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
9													
35							3 4 5 (9)	D-7			Silty SAND with gravel, loose, grey, wet, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
10													
40							4 4 5 (9)	D-8		GS MC	SM, MC=13% Silty SAND with gravel, loose, grey, wet, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
11													
45													
12													
13													

12/10/2002



LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200 SR 16

Elevation 368.7 ft (112.4 m)

HOLE No. TH-1-02

Sheet 3 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly Lic# 2705

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
14				2 1 2 (3)		D-9		Silty SAND with gravel, very loose, reddish brown, wet, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
50				28 50/6 (50/6")		D-10	GS MC	SP-SM, MC=9% Poorly graded SAND with silt and gravel, very dense, reddish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
55				50/6 (50/6")		D-11	GS MC	Silty SAND with gravel, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
60				>> 70/6 (70/6")		D-12		Silty SAND with gravel, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
								End of test hole boring at 60.5 ft below ground elevation.		
								This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
70										



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200

SR 16

Elevation 374.3 ft (114.1 m)

HOLE No. TH-2-02

Sheet 1 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly Lic# 2705

Site Address _____

Inspector Dave Nelson

Start December 10, 2002 Completion December 11, 2002 Well ID# _____ Equipment CME 850 w/ auto hammer

Station A22 178+82.52 Offset 56.6ft Rt. Casing HQx59 Method Wet Rotary

Northing 707422.4606 Easting 1140367.654 Latitude _____ Longitude _____

County Pierce Subsection NW-NE Section 2 Range 2EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1													
5							7 11 18 (29)	D-1		GS MC	SP, MC=10% Poorly graded SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
2													
10							13 21 29 (50)	D-2			Silty SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
3													
4													
15							9 13 20 (33)	D-3		GS MC	SP-SM, MC=13% Poorly graded SAND with silt and gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
5													
6							15 19	D-4		GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, dense, brown,		
20													

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 3/15/04,11:01:34 A3



LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200 SR 16

Elevation 374.3 ft (114.1 m)

HOLE No. TH-2-02

Sheet 2 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly Lic# 2705

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							17 (36)				moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
7													
25							10 11 9 (20)	D-5			Silty SAND with gravel, medium dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
8													
9							9 10 10 (20)	D-6		GS MC	SM, MC=12% Silty SAND with gravel, medium dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
30													
10													
35							6 8 8 (16)	D-7			Silty SAND with gravel, medium dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
11													
40							4 5 6 (11)	D-8		GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, medium dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
12													
45							6 6	D-9		GS MC	SM, MC=12% Silty SAND with gravel, medium dense, grey, wet,		
13													

12/11/2002





LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200

SR 16

Elevation 374.3 ft (114.1 m)

HOLE No. TH-2-02

Sheet 3 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly

Lic# 2705

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
14							6 (12)			Homogeneous, no HCl reaction Length Recovered 1.0 ft		
15							>>	9 35 27 (62)	D-10	Silty SAND with gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
16												
55							38 50/4 (50/4")	D-11	GS MC	SM, MC=10% Silty SAND with gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 0.6 ft		
17												
18							>>	37 59/6 (59/6")	D-12	Silty SAND with gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
60										End of test hole boring at 60 ft below ground elevation.		
19										This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
65												
20												
21												
70												

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 3/15/04,11:01:35 A3



Start Card _____

HOLE No. C-10-71

Sheet 1 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Site Address _____

Inspector James D. Lance

Start September 15, 1971 Completion _____ Well ID# _____ Equipment N/A

Station BC 81+19 Offset 36ft Lt. Casing 2 3/4"ID, Auger-33'.6" Method Rotary and Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	2				SOD		
				5						
				5						
				6						
				(10)						
				>>						
				23						
				33						
				44						
				47						
				(77)						
				>>						
				51						
				100/4						
				(100/4")						
				>>						
				68						
				94						
				(94/6")						
				>>						
				62						
				100/3						
				(100/3")						

SOIL XL1200 SR16 SNAKELAKE.GPJ SOIL.GDT 3/15/04 10:51:12 A3

Start Card _____

Job No. XL-1200

SR 16Elevation 316.3 ft (96.4 m)HOLE No. C-10-71Sheet 2 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							>> ◆	41 119 (119/6")	▲		Silty sandy GRAVEL, gray, (glacial till), very dense, contains lenses of silt, very hard		
25								>> ◆	52 100/2 (100/2")	▲			
30								>> ◆	67 105 (105/6")	▲			
35											End of test hole boring at 36.5 ft below ground elevation.		
11											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications		
											No water table encountered during drilling		
12											This boring log was reproduced from previous boring log C-10.		
40													
13													
45													



LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16 Elevation 312.8 ft (95.3 m)

HOLE No. C-11-71

Sheet 1 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Site Address _____

Inspector James D. Lance

Start September 17, 1971 Completion _____ Well ID# _____ Equipment N/A

Station BC 81+05 Offset 45ft Rt. Casing 2 3/4"ID, Auger-32'.6" Method Rotary and Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____

SOIL XL1200 SR16 SNAKELAKE.GPJ SOIL.GDT 3/15/04,10:51:15 A3

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							3		D-1		SOD		
							3				Silty sandy GRAVEL, brown, loose		
							4						
							6						
							(7)						
							>>		D-2		Silty sandy GRAVEL, mottled yellow brown and gray, very dense, contains scattered silt lenses.		
1							10						
							19						
							45						
5							37						
							(64)						
							>>		D-3				
							30						
							42						
							61						
							61						
10							(103)						
							>>		D-4				
							42				Silty sandy GRAVEL, gray, (glacial till), very dense		
							80						
							100						
							(180)						
15							>>		D-5				
							100/3						
							(100/3")						
20													

Start Card _____

Job No. XL-1200

SR 16

Elevation 312.8 ft (95.3 m)HOLE No. C-11-71

Sheet 2 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

[illegible]



LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16 Elevation 301.4 ft (91.9 m)

HOLE No. C-12-71

Sheet 1 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Site Address _____

Inspector James D. Lance

Start September 17, 1971 Completion _____ Well ID# _____ Equipment N/A

Station BC 79+81 Offset 33ft Lt. Casing 2 3/4"ID, Auger-23' Method Rotary and Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							11 18 12 11 (30)	▲	D-1		SOD		
1							17 19 30 40 (49)	▲	D-2		Silty sandy GRAVEL, brown, dense Gravelly silty SAND, yellow brown, dense		
5													
2													
							>>	80 97 (177)	▲	D-3			
10													
3							>>	120/6 (120/6")	▲	D-4			
4													
15							>>	50 100/4 (150/9")	▲	D-5			
5													
6											Silty sandy GRAVEL, gray, (glacial till), very dense, contains layers of gravelly sand.		
20													



LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 301.4 ft (91.9 m)

HOLE No. C-12-71

Sheet 2 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							>> 20 100/4 (120/9)		D-6		Silty sandy GRAVEL, gray, (glacial till), very dense, contains layers of gravelly sand.		
25											End of test hole boring at 23.9 ft below ground elevation.		
8											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications		
											No water table encountered during drilling		
											This boring log was reproduced from previous boring log C-12.		
9													
30													
10													
35													
11													
12													
40													
13													
45													



LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16 Elevation 300.4 ft (91.6 m)

HOLE No. C-13-71

Sheet 1 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Site Address _____

Inspector James D. Lance

Start September 20, 1971 Completion _____ Well ID# _____ Equipment N/A

Station BC 79+60 Offset 42ft Rt. Casing 2 3/4"ID, Auger Method Rotary and Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							>> 9		D-1		SOD		
							25						
							32						
							34						
							(57)						
							>> 38		D-2				
							77						
							100/3						
							(177/9")						
1													
5													
							>> 25		D-3				
							60						
							95						
							(155)						
10													
							>> 43		D-4				
							100/5						
							(100/5")						
15													
							>> 37		D-5				
							100/3						
							(100/3")						
20													

LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 300.4 ft (91.6 m)HOLE No. C-13-71

Sheet 2 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

[illegible]

LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16 Elevation 300.0 ft (91.4 m)

HOLE No. C-14-71

Sheet 1 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Site Address _____

Inspector James D. Lance

Start September 23, 1971 Completion _____ Well ID# _____ Equipment N/A

Station BC 78+63 Offset 2ft Rt. Casing 2 3/4"ID, Auger-43' Method Rotary and Auger

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40	0 1 0 1 (1)	D-1					
1				0 0 0 1 (0)	D-2			PEAT, brown, very soft	▽	
5				6 13 10 11 (23)	D-3			Silty sandy GRAVEL, gray, (glacial till), dense SAND, light brown, compact		
10				13 9 8 15 (17)	D-4			SAND, gray-brown, wet, compact		
15			>>	18 18 126 (144)	D-5					
20			>>	58 99 (99/6")	D-6			Silty sandy GRAVEL, gray, (glacial till), very dense		



LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 300.0 ft (91.4 m)

HOLE No. C-14-71

Sheet 2 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
7							>> 51 46 76 (122)	D-7		Silty sandy GRAVEL, gray-brown, (glacial till), very dense, layered with gravelly sand		
25												
8							>> 20 71 61 (132)	D-8				
30												
10							>> 30 100/4 (100/4")	D-9				
35												
11												
12							>> 25 44 64 (108)	D-10		SAND, gray-brown, very dense		
40												
13							>> 16 31 48 (79)	D-11				
45												



LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16 Elevation 300.0 ft (91.4 m)

HOLE No. C-14-71

Sheet 3 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14											End of test hole boring at 44.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications This boring log was reproduced from previous boring log C-14 with engineering judgement.		
15													
50													
16													
55													
17													
18													
60													
19													
65													
20													
21													
70													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S 14135

Job No. XL-1200 SR 16 Elevation 303.0 ft (92.4 m)

HOLE No. H-1-03

Sheet 1 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Kerry Cooper Lic# 2552

Site Address _____

Inspector Brian Hilts

Start February 11, 2003 Completion February 11, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station 77+31.7 Offset 75ft Lt. Casing HWTx32 HQx62 Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection NW1/4 SE1/4 Section 12 Range 2 EWM Township 20

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							0 0 0 (0)		D-1		No Recovery		
5							0 0 0 (0)		D-2		PEAT, very soft, very dark brown, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
10							6 5 5 (10)		D-3	GS MC	SP-SM, MC=16% Poorly graded SAND with silt and gravel, loose, dark grayish brown, wet, Homogeneous, no HCl reaction, at 11' we encountered gravels demonstrated by drilling Length Recovered 0.8 ft, Length Retained 0.8 ft		
15							11 7 3 (10)		D-4		Poorly graded SAND with silt and gravel, loose, dark gray, wet, Stratified, no HCl reaction, the top .5' was (SW) sand with gravel and the bottom .4' was sandy silt. At 16' drilling became easier. Length Recovered 0.9 ft, Length Retained 0.9 ft		
20													

SOIL XL1200 SR16 SNAKELAKE.GPJ SOIL.GDT 3/15/04,10:51:24 A3



LOG OF TEST BORING

Start Card S 14135

Job No. XL-1200 SR 16

Elevation 303.0 ft (92.4 m)

HOLE No. H-1-03

Sheet 2 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Kerry Cooper Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
				3 4 8 (12)	D-5			Sandy silty CLAY, stiff, grayish brown, moist, Laminated, no HCl reaction, the top .8' was silt with fine sand and the bottom .3' was silty sand. Laminated with sand lenses and FeO stains. AT 24' to 26' we encountered silt demonstrated by drilling and the SPT. Length Recovered 1.1 ft, Length Retained 1.1 ft		
7										
25				2 2 14 (16)	D-6		GS MC AL	CL-ML, MC=23%, PI=7 Sandy silty CLAY, very stiff, dark gray, moist, Homogeneous, no HCl reaction, the bottom .4' was reddish brown sand. (moisture tin obtained) We encountered gravels at 26.5' to 30'. Length Recovered 1.5 ft, Length Retained 1.5 ft		
8										
30				14 15 27 (42)	D-7			Poorly graded SAND with silt and gravel, dense, grayish brown, wet, Homogeneous, no HCl reaction Length Recovered 0.9 ft, Length Retained 0.9 ft		
9										
35				>> 55/6" (55/6")	D-8			No Recovery		
11										
40				>> 100/3" (100/3")	D-9			Poorly graded SAND with silt and gravel, very dense, grayish brown, wet, Homogeneous, no HCl reaction, We encountered scattered gravel throughout run. Length Recovered 0.3 ft, Length Retained 0.3 ft		
12										
45				>> 100/5"	D-10			Poorly graded SAND with silt and gravel, very dense, grayish		
13										



LOG OF TEST BORING

Start Card S 14135

Job No. XL-1200

SR 16

Elevation 303.0 ft (92.4 m)

HOLE No. H-1-03

Sheet 3 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Kerry Cooper

Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14							(100/5")				brown, wet, Homogeneous, no HCl reaction, At 48' drilling smoothed out with very few gravels. Length Recovered 0.4 ft, Length Retained 0.4 ft		
15													
50							>> 75/3" (75/3")	◆	D-11		Poorly graded SAND with silt and gravel, very dense, grayish brown, wet, Homogeneous, no HCl reaction, with FeO stains. Length Recovered 0.2 ft, Length Retained 0.2 ft		
16													
55							>> 33 45 50 (95)	◆	D-12	GS MC	SP-SM, MC=19% Poorly graded SAND with silt, very dense, grayish brown, wet, Homogeneous, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.3 ft		
17													
18													
60							>> 31 60/6" (60/6")	◆	D-13		Poorly graded SAND with silt, very dense, grayish brown, wet, Homogeneous, no HCl reaction, see site map on my field notes for the hole location. Length Recovered 0.8 ft, Length Retained 0.8 ft		
19											End of test hole boring at 60.5 ft below ground elevation.		
65											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20													
21													
70													

SOIL XL1200 SR16 SNAKELAKE.GPJ SOIL.GDT 3/15/04,10:51:25 A3



LOG OF TEST BORING

Job No. XL-1200 SR 16 Elevation 303.0 ft (92.4 m)

Start Card S 14135

HOLE No. H-2-03

Sheet 1 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Kerry Cooper Lic# 2552

Site Address _____

Inspector Brian Hiltz

Start February 10, 2003 Completion February 10, 2003 Well ID# _____ Equipment CME 45 w/ autohammer

Station 78+60 Offset 83ft Rt. Casing HWTx37 HQx62 Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection NW1/4 SE1/4 Section 12 Range 2 EWM Township 20

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							0 0 0 (0)	D-1			PEAT, very soft, very dark brown, wet, Homogeneous, no HCl reaction, soil became denser a 4'. Length Recovered 0.6 ft, Length Retained 0.6 ft		
5							1 4 8 (12)	D-2		GS MC	SM, MC=30% Silty SAND, medium dense, dark brown, wet, Homogeneous, no HCl reaction, with a trace of gravel and silt with some dark brown organics. At 8' we encountered gravels demonstrated by drilling. Length Recovered 1.3 ft, Length Retained 1.3 ft		
10							19 25 22 (47)	D-3		GS MC	SM, MC=16% Silty SAND with gravel, dense, grayish brown, wet, Stratified, no HCl reaction, the top .5' was (GW) with sand and wet, the bottom .6' was (SM) with gravel, all with FeO stains Length Recovered 1.1 ft, Length Retained 1.1 ft		
15							40 50/4" (50/4")	D-4			Silty SAND with gravel, very dense, grayish brown, moist, Stratified, Laminated, no HCl reaction, stratified and laminated with silty sand layers. Length Recovered 0.8 ft, Length Retained 0.8 ft		
20													



LOG OF TEST BORING

Start Card S 14135

Job No. XL-1200

SR 16

Elevation 303.0 ft (92.4 m)

HOLE No. H-2-03

Sheet 2 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Kerry Cooper

Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							47 50/4" (50/4")	D-5			Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.7 ft, Length Retained 0.7 ft		
25							>> 14 23 30 (53)	D-6		GS MC	SM, MC=20% Silty SAND, very dense, grayish brown, wet, Laminated, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.2 ft		
30							>> 55/6" (55/6")	D-7			Silty SAND with gravel, very dense, grayish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft		
35							>> 34 35 50/5" (85/11")	D-8		GS MC	SP-SM, MC=16% Poorly graded SAND with silt, very dense, grayish brown, wet, Laminated, no HCl reaction, with a trace of gravel. Length Recovered 1.2 ft, Length Retained 1.2 ft		
40							37 50/1" (50/1")	D-9			Poorly graded SAND with silt, very dense, dark grayish brown, wet, Homogeneous, no HCl reaction, color change at 42' to reddish brown to 44'. Length Recovered 0.5 ft, Length Retained 0.5 ft		
45													



LOG OF TEST BORING

Start Card S 14135

Job No. XL-1200

SR 16

Elevation 303.0 ft (92.4 m)

HOLE No. H-2-03

Sheet 3 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Kerry Cooper Lic# 2552

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14							35 50/3" (50/3")	▲	D-10		Silty SAND, very dense, dark grayish brown, wet, Stratified, no HCl reaction, the top .4' dark grayish brown with FeO stains and the bottom .4' (SP) bluish gray. Length Recovered 0.7 ft, Length Retained 0.7 ft		
50							42 50/6" (50/6")	▲	D-11		Silty SAND, very dense, grayish brown, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
55							45 50/4" (50/4")	▲	D-12		Silty SAND, very dense, grayish brown, wet, Homogeneous, no HCl reaction, with a trace of gravel. Length Recovered 0.8 ft, Length Retained 0.8 ft		
60							>> 24 31 40 (71)	▲	D-13		Silty SAND, very dense, grayish brown, wet, Homogeneous, no HCl reaction, with some gravel and a trace of FeO stains. Length Recovered 1.3 ft, Length Retained 1.3 ft		
19											End of test hole boring at 61.5 ft below ground elevation.		
65											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20													
21													
70													



LOG OF TEST BORING

Start Card S23800

Job No. XL-1200 SR 16 Elevation 343.0 ft (104.6 m)

HOLE No. H-3-03

Sheet 1 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 21, 2003 Completion July 21, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station A22 76+11.21 Offset 84.41ft Rt. Casing HW 4.5"/HQ 3.5" Method Wet Rotary

Northing _____ Easting _____ Latitude _____ Longitude _____

County Pierce Subsection NW 1/4 of the SE 1/24 Section 12 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							8 7 7 (14)	D-1		GS MC	SP-SM, MC=9% Poorly graded SAND with silt and gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.2 ft, Length Retained 1.2 ft		
5							6 9 8 (17)	D-2		GS MC	GW-GM, MC=7% Well graded GRAVEL with silt and sand, subangular, medium dense, gray, dry, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							11 10 9 (19)	D-3			Well graded GRAVEL with silt and sand, subangular, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
15							8 7 7 (14)	D-4			Well graded GRAVEL with silt and sand, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
20													



LOG OF TEST BORING

Start Card S23800

Job No. XL-1200 SR 16

Elevation 343.0 ft (104.6 m)

HOLE No. H-3-03

Sheet 2 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40							
				8 11 11 (22)		D-5	GS MC	GP-GM, MC=10% Poorly graded GRAVEL with silt and sand, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
7										
25				9 8 6 (14)		D-6	GS MC	SP-SM, MC=11% Poorly graded SAND with silt and gravel, medium dense, dark brown, moist, Disrupted, no HCl reaction, w/large gravel as indicated by drilling process. mixed soil colors.w/trace of organics. Length Recovered 1.5 ft, Length Retained 1.5 ft		
8										
30				13 15 18 (33)		D-7		Poorly graded SAND with silt and gravel, dense, light brown, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
9										
35				20 25 34 (59)		D-8		Well graded GRAVEL with sand, subangular, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
10										
36.5								End of test hole boring at 36.5 ft below ground elevation.		
11								This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
12										
40										
13										
45										



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S23800

Job No. XL-1200

SR 16

Elevation 344.7 ft (105.1 m)

HOLE No. H-4-03

Sheet 1 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Joe Judd Lic# 2454

Site Address _____

Inspector Dan Reed

Start July 22, 2003

Completion July 22, 2003

Well ID# _____

Equipment CME 850 w/ autohammer

Station A22 81+28.6

Offset 75.39ft Rt.

Casing HQ 4.5"/HW 3.5"

Method Wet Rotary

Northing _____

Easting _____

Latitude _____

Longitude _____

County Pierce

Subsection NW 1/4 of the SE 1/4

Section 12

Range 2 EWM

Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							4 6 8 (14)	D-1	GS MC	GS MC	SP-SM, MC=5% Poorly graded SAND with silt and gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.0 ft, Length Retained 1.0 ft		
5							5 7 7 (14)	D-2	GS MC	GS MC	GP-GM, MC=3% Poorly graded GRAVEL with silt and sand, angular, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
10							7 7 6 (13)	D-3	GS MC	GS MC	SP-SM, MC=6% Poorly graded SAND with silt and gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
15							3 3 4 (7)	D-4			Poorly graded SAND with silt and gravel, loose, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
20													

SOIL XL1200 SR16 SNAKELAKE.GPJ SOIL.GDT 3/15/04,10:51:34 A3



LOG OF TEST BORING

Start Card S23800

Job No. XL-1200 SR 16

Elevation 344.7 ft (105.1 m)

HOLE No. H-4-03

Sheet 2 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller Joe Judd Lic# 2454

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7				20			8 9 11 (20)	▲	D-5		Poorly graded SAND with silt and gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/cobbles as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
25							14 13 12 (25)	▲	D-6		Poorly graded SAND with silt and gravel, medium dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. w/trace of organics. Length Recovered 1.5 ft, Length Retained 1.5 ft		
30							11 9 8 (17)	▲	D-7	GS MC	SM, MC=21% Silty SAND with gravel, medium dense, dark brown, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.5 ft, Length Retained 1.5 ft		
35							41 57 (57)	▲	D-8	GS MC	SW-SM, MC=12% Well graded SAND with silt, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.0 ft, Length Retained 1.0 ft		
40							46 59 (59)	▲	D-9		Well graded SAND with silt, very dense, gray, moist, Homogeneous, no HCl reaction, w/large gravel as indicated by drilling process. Length Recovered 1.0 ft, Length Retained 1.0 ft		
41											End of test hole boring at 41 ft below ground elevation.		
45											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 310.2 ft (94.5 m)

HOLE No. J-5-71

Sheet 1 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Site Address _____

Inspector James D. Lance

Start October 1, 1971 Completion _____ Well ID# _____ Equipment N/A

Station BC 76+02 Offset 39ft Lt. Casing 3"ID, Auger-25' Method Jet and Chop

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							>>				Forest Duff		
							7 23 33 32 (56)		D-1		Silty sandy GRAVEL, gray-brown, (glacial till), dense to very dense.		
1													
5							>>				SAND, gray-brown, very dense, fine to medium sand.		
							13 21 65 (86)		D-2				
2													
10							>>				Gravelly SAND, gray-brown, very dense, contains scattered silt lenses.		
							30 60 82 (142)		D-3				
4													
15							>>						
							37 60 98 (158)		D-4				
5													
6													
20							>>						

SOIL XL1200 SR16 SNAKELAKE.GPJ SOIL.GDT 3/15/04,10:51:37 A3



Start Card _____

Job No. XL-1200

SR 16Elevation 310.2 ft (94.5 m)HOLE No. J-5-71

Sheet 2 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

SOIL XL1200 SR16 SNAKELAKE.GPJ SOIL.GDT 3/15/04,10:51:37 A3

LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16 Elevation 310.7 ft (94.7 m)

HOLE No. J-6-71

Sheet 1 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Site Address _____



































Inspector James D. Lance

Start October 7, 1971 Completion _____ Well ID# _____ Equipment N/A

Station BC 76+24 Offset 47ft Rt. Casing 3"ID, Auger-25' Method Jet and Chop

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40	2		D-1		Forest Duff		
				12				Silty sandy GRAVEL, light brown, (weathered glacial till), compact		
				7						
				6						
				(19)						
				8		D-2				
				12						
				16						
				11						
				(28)						
										
5								Silty sandy GRAVEL, gray-brown, (glacial till), very dense.		
										
										
										
										
										
										
										
										
										
10								Silty sandy GRAVEL, gray-brown, (glacial till), very dense.		
										
										
										
										
										
										
										
										
										
15								Silty sandy GRAVEL, gray-brown, (glacial till), very dense.		
										
										
20										

LOG OF TEST BORING

Start Card

Job No. XL-1200

SR 16

Elevation 310.7 ft (94.7 m)

HOLE No. J-6-71

Sheet 2 of 2

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

[illegible]



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 300.4 ft (91.6 m)

HOLE No. J-7-71

Sheet 1 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Site Address _____

Inspector James D. Lance

Start October 14, 1971

Completion _____

Well ID# _____

Equipment N/A

Station BC 77+50

Offset CL

Casing 3"ID, Auger-49'

Method Jet and Chop

Northing _____

Easting _____

Latitude _____

Longitude _____

County _____

Subsection _____

Section _____

Range _____

Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							0 0 0 1 (0)		D-1				
5							0 0 0 1 (0)		D-2		PEAT, brown, very soft		
10							6 10 9 10 (19)		D-3				
15							9 8 19 19 (27)		D-4		Silty gravelly SAND, gray-brown, compact		
20							6 6		D-5				

SOIL XL1200 SR16 SNAKELAKE.GPJ SOIL.GDT 3/15/04, 10:51:42 A3



LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 300.4 ft (91.6 m)

HOLE No. J-7-71

Sheet 2 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							5 5 (11)	▲			SAND and sandy silt, gray, layered, compact		
7													
							15 8 5 6 (13)	▲	D-6		Layer of sandy GRAVEL, dense		
25											SAND and sandy silt, compact, layered, gray		
8													
							>>	36 52 78 (130)	▲	D-7			
30													
9							>>	51 107 (107/6")	▲	D-8			
10													
							>>	6 21 40 62 (61)	▲	D-9			
35											Glacial TILL-not as dense (38.0' to 39.3')		
11													
40													
12													
							>>	56 58	▲	D-10			
											Gravelly SAND, light brown, very dense, slightly silty		
13													
45													



LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 300.4 ft (91.6 m)

HOLE No. J-7-71

Sheet 3 of 3

Project SR-16 Snake Lake Bridge Widening M.P. 1.57 Bridge 16/20 E&W

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14							62 (120)	▲			Gravelly SAND, light brown, very dense, slightly silty		
15							>> 64	▲	D-11				
50							93 (93/6")	▲					
16													
55											End of test hole boring at 57.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications This boring log was reproduced from previous boring log J-7.		
17							>> 36	▲	D-12				
60							38	▲					
18							36 (74)	▲					
19													
65													
20													
21													
70													



LOG OF TEST BORING

Start Card S 14926

Job No. XL-1200 SR 16 Elevation 324.7 ft (99.0 m)

HOLE No. TH-1-03

Sheet 1 of 2

Project Union Ave to Jackson Ave

Driller James Fetterly Lic# 2507

Site Address _____

Inspector Mike Mulhern

Start June 5, 2003 Completion June 5, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 158+00.54 Offset 14.48ft Rt. Casing 3.5"/HQ Method Wet Rotary

Northing 705451.56 Easting 1140961.467 Latitude _____ Longitude _____

County Pierce Subsection nw 1/4 se 1/4 Section 2 Range 2 EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1							50/5" (50/5")	◆	D-1		Silty SAND, very dense, light gray, moist, Homogeneous, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
5													
2													
10							17 21 21 (42)	◆	D-2	GS MC	SM, MC=10% Silty SAND, dense, light gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
3													
4							15 27 31 (58)	◆	D-3	GS MC	MC=10% Silty SAND, very dense, light gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
15													
5													
20							16 26 50 (76)	◆	D-4		Silty SAND, very dense, light gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
6													



LOG OF TEST BORING

Start Card S 14926

Job No. XL-1200

SR 16

Elevation 324.7 ft (99.0 m)

HOLE No. TH-1-03

Sheet 2 of 2

Project Union Ave to Jackson Ave

Driller James Fetterly

Lic# 2507

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7							22	D-5			Silty SAND, dense, light gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
25							21						
							20 (41)						
8													
							3	D-6			ML, MC=30% SILT, very stiff, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft, Length Retained 0.8 ft		
							5			GS			
9							13 (18)			MC AL			
30											End of test hole boring at 29.5 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
10													
35													
11													
40													
12													
13													
45													



LOG OF TEST BORING

Start Card S 14926

Job No. XL-1200 SR 16 Elevation 325.8 ft (99.3 m)

HOLE No. TH-2-03

Sheet 1 of 2

Project Union Ave to Jackson Ave

Driller James Fetterly Lic# 2507

Site Address _____

Inspector Mike Mulhern

Start June 2, 2003 Completion June 2, 2003 Well ID# _____ Equipment CME 850 w/ autohammer

Station 155+94.98 Offset 16.66ft Rt. Casing 3.5"/HQ Method Wet Rotary

Northing 705274.75 Easting 1141066.345 Latitude _____ Longitude _____

County Pierce Subsection nw 1/4 se 1/4 Section 2 Range 2 EWM Township 20n

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
1							>> 25 41 46 (87)	D-1	GS MC	SM, MC=8% Silty SAND with gravel, very dense, light gray, dry, Homogeneous, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.0 ft		
5							>> 18 30 33 (63)	D-2		Silty SAND with gravel, very dense, light gray, moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
10							17 33 50/5" (88/11")	D-3		Silty SAND with gravel, very dense, light gray, moist, Homogeneous, no HCl reaction Length Recovered 1.4 ft, Length Retained 1.0 ft		
15							26 50/3" (50/3")	D-4	GS MC	SM, MC=10% Silty SAND with gravel, very dense, light gray, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft, Length Retained 0.5 ft		
20							23 24	D-5	GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, dense, olive gray,		



LOG OF TEST BORING

Start Card S 14926

Job No. XL-1200

SR 16

Elevation 325.8 ft (99.3 m)

HOLE No. TH-2-03

Sheet 2 of 2

Project Union Ave to Jackson Ave

Driller James Fetterly

Lic# 2507

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
							25 (49)			moist, Homogeneous, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft		
7												
25							9 16 18 (34)	D-6		Poorly graded SAND with silt and gravel, dense, olive gray, moist, Stratified, no HCl reaction, turning to silty SAND with gravel @ 25' Length Recovered 1.0 ft, Length Retained 1.0 ft		
8												
9							11 18 23 (41)	D-7		Poorly graded SAND with silt and gravel, dense, olive gray, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft, Length Retained 1.0 ft		
30												
										End of test hole boring at 30.5 ft below ground elevation.		
10										This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
35												
11												
12												
40												
13												
45												



LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16 Elevation 340.3 (103.7 m)

HOLE No. H-1-80

Sheet 1 of 2

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Site Address _____

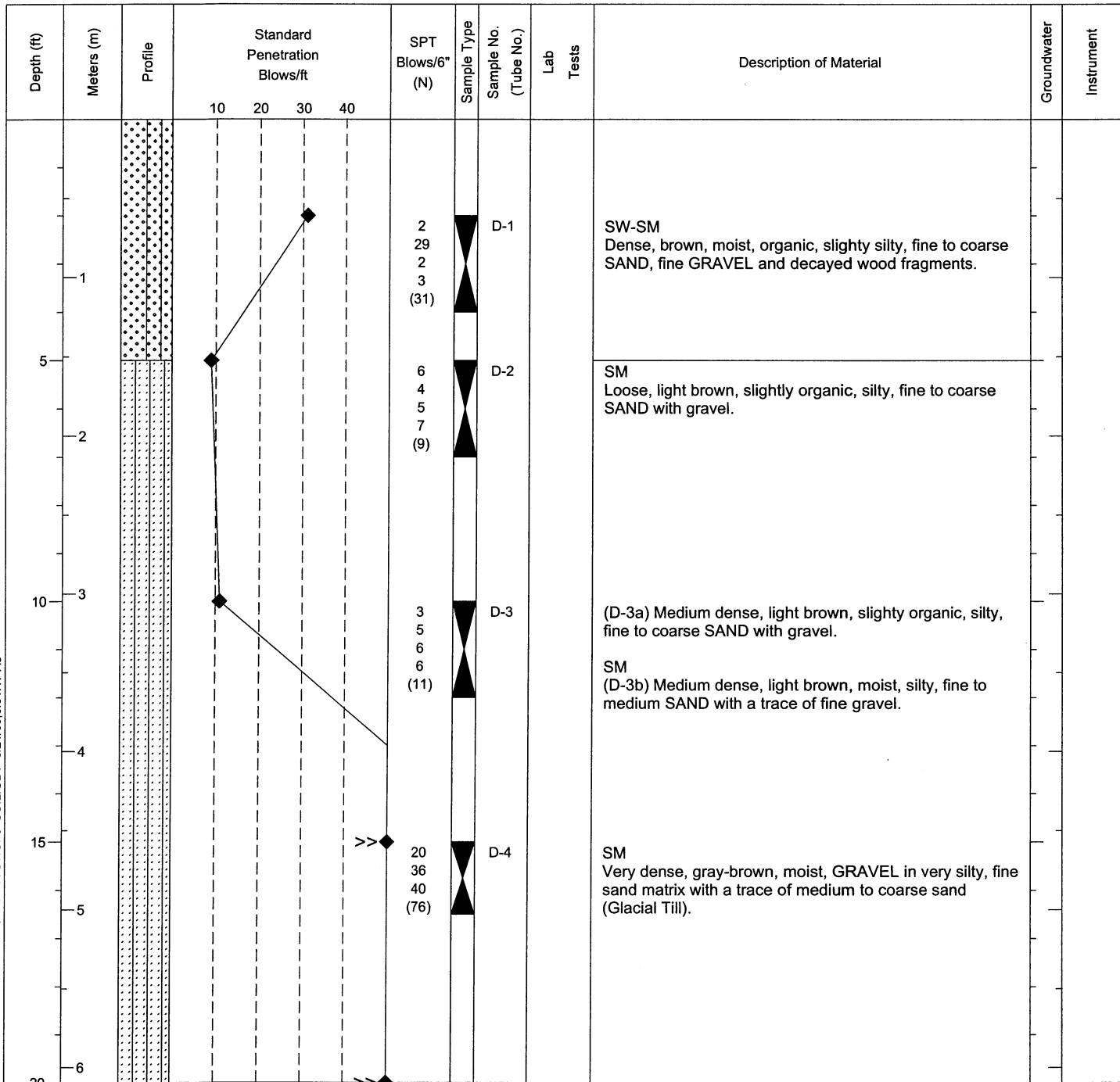
Inspector _____

Start October 20, 1980 Completion _____ Well ID# _____ Equipment _____

Station BC 178+80 Offset 14ft Lt. Casing Auger Method _____

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____





LOG OF TEST BORING

Start Card _____

Job No. XL-1200

SR 16

Elevation 340.3 (103.7 m)

HOLE No. H-1-80

Sheet 2 of 2

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							40 100/5 (140/11")	D-5			SM Very dense, light gray-brown, moist, very silty, fine to coarse SAND with gravel (Glacial Till).		
7													
25							40 88 (128)	D-6			SM Very dense, light gray-brown, moist, silty, fine to medium SAND with a trace of fine gravel (Glacial Till).		
8													
9											End of Test Hole Boring at 28 feet below ground elevation. This Boring Log was recreated from a 1980 Washington State Department of Transportation Log of Test Boring.		
30													
10													
35													
11													
40													
12													
13													
45													



LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16 Elevation 341.4 (104.1 m)

HOLE No. H-3-80

Sheet 1 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Site Address _____

Inspector _____

Start October 29, 1980 Completion _____ Well ID# _____ Equipment _____

Station BC 177+50 Offset 25ft Lt. Casing Auger Method _____

Northing _____ Easting _____ Latitude _____ Longitude _____

County _____ Subsection _____ Section _____ Range _____ Township _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
							5 11 17 17 (28)	▲	D-1		Dense, gray, moist, very silty, fine to coarse SAND with gravel (Fill).		
1													
5							2 4 4 3 (8)	▲	D-2		(D-2a) Loose, gray, moist, very silty, fine to coarse SAND with gravel and roots. SM (D-2b) Loose, dark brown, organic, very silty, fine to coarse SAND with gravel.		
2													
10							2 2 1 1 (3)	▲	D-3		SM Very loose, dark brown and gray, highly organic, silty, moist, fine to coarse SAND with fine gravel and decayed wood fragments.		
3													
4													
15							4 4 5 6 (9)	▲	D-4		Loose, brown, moist, silty, fine to coarse SAND with gravel.		
5													
6													
20													

Start Card _____

Job No. XL-1200

SR 16

Elevation 341.4 (104.1 m)HOLE No. H-3-80

Sheet 2 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
7						>>	31 85 (116)	D-5			Very dense, gray, moist, GRAVEL in very silty fine sand matrix with a trace of medium to coarse sand (Glacial Till).		
25						>>	22 31 50/5 (81/11")	D-6			SM Very dense, gray, moist, silty, fine to coarse SAND with gravel.		
30						>>	37 40 52 (92)	D-7			Very dense, gray, moist, silty, fine to coarse SAND with gravel.		
35						>>	50 75 (125)	D-8			Very dense, gray, moist, GRAVEL in very silty fine sand matrix with a trace of medium to coarse sand (Glacial Till).		
40						>>	27 50 50/3 (100/9")	D-9			Very dense, gray, moist, very silty, fine to coarse SAND with gravel (Glacial Till).		
45						>>							



LOG OF TEST BORING

Start Card _____

Job No. XL-1200 SR 16

Elevation 341.4 (104.1 m)

HOLE No. H-3-80

Sheet 3 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller _____ Lic# _____

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14							29 55 60 (115)	▲	D-10		No recovery (very dense).		
15													
50							29 41 65 (106)	▲	D-11		Very dense, gray, moist, silty, fine to coarse SAND with gravel (Glacial Till).		
16											End of Test Hole Boring at 51.5 feet below ground elevation. This Boring Log was recreated from a 1980 Washington State Department of Transportation Log of Test Boring.		
55													
17													
18													
60													
19													
65													
20													
21													
70													



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200

SR 16

Elevation 368.7 (112.4 m)

HOLE No. TH-1-02

Sheet 1 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly Lic# 2705

Site Address _____

Inspector Dave Nelson

Start December 9, 2002 Completion December 10, 2002 Well ID# _____ Equipment CME 850 w/ auto hammer

Station A22 176+89.65 Offset 26.1ft Rt. Casing HQx60.0 Method Wet Rotary

Northing 707223.5597 Easting 1140394.633 Latitude _____ Longitude _____

County Pierce Subsection NW-NE Section 2 Range 2EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1													
5							8 11 13 (24)	D-1			Poorly graded SAND with gravel, medium dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
2													
10							11 19 23 (42)	D-2			Poorly graded SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
4													
15							8 12 33 (45)	D-3			Poorly graded SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
5													
6													
20													

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 8/21/03 8:01:19 A8



Start Card S-14128

Elevation 368.7 (112.4 m)HOLE No. TH-1-02

Sheet 2 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly Lic# 2705SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 8/21/03,8:01:19 A8



LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200

SR 16

Elevation 368.7 (112.4 m)

HOLE No. TH-1-02

Sheet 3 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly

Lic# 2705

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10 20 30 40	2 1 2 (3)	D-9			Silty SAND with gravel, very loose, reddish brown, wet, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
14										
15										
50				28 50/6 (50/6")	D-10		GS MC	SP-SM, MC=9% Poorly graded SAND with silt and gravel, very dense, reddish brown, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
16										
55				50/6 (50/6")	D-11		GS MC	Silty SAND with gravel, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
17										
18										
60				>> 70/6 (70/6")	D-12			Silty SAND with gravel, very dense, grey, moist, Homogeneous, no HCl reaction Length Recovered 0.5 ft		
19								End of test hole boring at 60.5 ft below ground elevation.		
65								This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20										
21										
70										

SOIL XL-1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 8/21/03.8:01:19 A8



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200 SR 16 Elevation 374.3 (114.1 m)

HOLE No. TH-2-02

Sheet 1 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly Lic# 2705

Site Address _____

Inspector Dave Nelson

Start December 10, 2002 Completion December 11, 2002 Well ID# _____ Equipment CME 850 w/ auto hammer

Station A22 178+82.52 Offset 56.6ft Rt. Casing HQx59 Method Wet Rotary

Northing 707422.4606 Easting 1140367.654 Latitude _____ Longitude _____

County Pierce Subsection NW-NE Section 2 Range 2EWM Township 20N

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
1													
5							7 11 18 (29)	D-1		GS MC	SP, MC=10% Poorly graded SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
10							13 21 29 (50)	D-2			Silty SAND with gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
15							9 13 20 (33)	D-3		GS MC	SP-SM, MC=13% Poorly graded SAND with silt and gravel, dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
20							15 19	D-4		GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, dense, brown,		

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 8/21/03 8:01:20 A8



LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200

SR 16

Elevation 374.3 (114.1 m)

HOLE No. TH-2-02

Sheet 2 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly

Lic# 2705

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
							17 (36)			moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
7												
25							10 11 9 (20)	D-5		Silty SAND with gravel, medium dense, brown, moist, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
8												
30							9 10 10 (20)	D-6	GS MC	SM, MC=12% Silty SAND with gravel, medium dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
10												
35							6 8 8 (16)	D-7		Silty SAND with gravel, medium dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
11												
40							4 5 6 (11)	D-8	GS MC	SP-SM, MC=10% Poorly graded SAND with silt and gravel, medium dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
13												
45							6 6	D-9	GS MC	SM, MC=12% Silty SAND with gravel, medium dense, grey, wet,		

12/11/2002

SOIL XL1200 UNION AVE TO PEARL ST.GPJ SOIL.GDT 8/21/03 8:01:20 A8



LOG OF TEST BORING

Start Card S-14128

Job No. XL-1200 SR 16

Elevation 374.3 (114.1 m)

HOLE No. TH-2-02

Sheet 3 of 3

Project Union Ave. To Pearl St., 6th Ave. O-XING

Driller James Fetterly Lic# 2705

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40							
14							6 (12)	▲			Homogeneous, no HCl reaction Length Recovered 1.0 ft		
15							>>	◆	9	D-10	Silty SAND with gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 1.0 ft		
50							35 27 (62)	▲					
16													
55							38 50/4 (50/4")	◆	D-11	GS MC	SM, MC=10% Silty SAND with gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 0.6 ft		
17													
18							>>	◆	37	D-12	Silty SAND with gravel, very dense, grey, wet, Homogeneous, no HCl reaction Length Recovered 0.8 ft		
60							59/6 (59/6")	▲					
19											End of test hole boring at 60 ft below ground elevation.		
65											This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
20													
21													
70													

APPENDIX D

NPDES Industrial Stormwater Permit For Construction Activities

Issuance Date: October 4, 2000
Effective Date: November 18, 2000
Expiration Date: November 18, 2005

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND STATE
WASTE DISCHARGE GENERAL PERMIT FOR
STORMWATER DISCHARGES ASSOCIATED WITH

CONSTRUCTION ACTIVITIES

State of Washington
DEPARTMENT OF ECOLOGY
Olympia, Washington 98504-7696

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

Until this permit expires, is modified or revoked, permittees that have properly obtained coverage under this permit are authorized to discharge to waters of the state in accordance with the special and general conditions which follow.

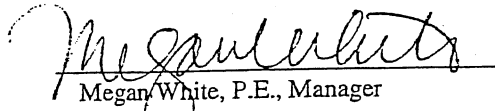

Megan White, P.E., Manager
Water Quality Program
Department of Ecology

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Also Included in the Back of This Booklet:

- Instructions - Notice of Intent for Construction Activity
- Notice of Intent for Construction Activity
- Notice of Termination for Construction Activity
- Request For Renewal

Definitions

Best Management Practices (BMPs - general definition) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In this permit BMPs are further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

Bypass means the diversion of waste streams from any portion of a treatment facility.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

Constructed Wetland means wetlands intentionally created, on sites that are not natural wetlands, for the primary purpose of wastewater or stormwater treatment and managed as such. Constructed wetlands are normally considered as part of the stormwater collection and treatment system.

Construction Activity means clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Construction Dewatering means the act of pumping ground water or stormwater away from an active construction site.

Detention means the temporary storage of stormwater to improve quality and/or to reduce the mass flow rate of discharge.

Director means the Director of the Washington Department of Ecology or his/her authorized representative.

Discharger means an owner or operator of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such ground water infiltration or surface waters as may be present.

Ecology means the Washington Department of Ecology.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to surface water or to ground water than BMPs selected from the SWMM.

Equivalent Stormwater Management Manual means a manual that has been deemed by Ecology as being equivalent to the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, and

sediment traps and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

Erosion and Sediment Control Plan means a document which describes the potential for erosion and sedimentation problems, and explains and illustrates the measures which are to be taken to control those problems.

Final Stabilization means the completion of all soil disturbing activities at the site and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) which will prevent erosion.

"40 CFR" means Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

General Permit means a permit which covers multiple dischargers of a point source category within a designated geographical area, in lieu of individual permits being issued to each discharger.

Ground Water means water in a saturated zone or stratum beneath the land surface or a surface water body.

Illicit discharge means any discharge that is not composed entirely of stormwater except discharges authorized under a separate NPDES permit and discharges resulting from fire fighting activities.

Leachate means water or other liquid that has percolated through raw material, product or waste and contains substances in solution or suspension as a result of the contact with these materials.

Local Government means any county, city, or town having its own government for local affairs.

Municipality means a political unit such as a city, town or county; incorporated for local self-government.

Municipal Entity means incorporated cities and counties (municipalities) as well as service districts such as school districts, sanitary sewer districts, flood control districts, fire districts, port districts and unincorporated towns and townships.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

Notice of Intent (NOI) means the application for, or a request for coverage under this General Permit pursuant to WAC 173-226-200.

Notice of Termination (NOT) means a request for termination of coverage under this general permit as specified by Special Condition S10 of this permit.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure and container from which pollutants are or may be discharged to surface waters of the state. This term does not include return flows from irrigated agriculture. (See Fact Sheet for further explanation.)

Pollutant means the discharge of any of the following to waters of the state: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste. This term does not include sewage from

vessels within the meaning of section 312 of the FWPCA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the state; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

Process Wastewater means any water which, during manufacturing or processing, comes into direct contact or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Puget Sound Basin means the Puget Sound south of Admiralty Inlet (including Hood Canal and Saratoga Passage); the waters north to the Canadian border, including portions of the Strait of Georgia; the Strait of Juan de Fuca south of the Canadian border; and all the lands draining into these waters as mapped in Water Resources Inventory Areas numbers 1 through 19, set forth in WAC 173-500-040.

Sanitary Sewer means a sewer which is designed to convey domestic wastewater.

Sediment means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation means the depositing or formation of sediment.

SEPA (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Significant Amount means an amount of a pollutant in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a pollutant that has a reasonable potential to cause a violation of surface or ground water quality or sediment management standards.

Significant Contributor of Pollutant(s) means a facility determined by Ecology to be a contributor of a significant amount(s) of a pollutant(s) to waters of the state of Washington.

Significant Materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

Site means the land or water area where any "facility or activity" is physically located or conducted.

Source Control BMPs means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

Stabilization means the application of appropriate BMPs to prevent the erosion of soils, such as, temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of Erosion and Sediment Control BMPs.

Storm Sewer means a sewer that is designed to carry stormwater. Also called a storm drain.

Stormwater means rainfall and snow melt runoff.

Stormwater Drainage System means constructed and natural features which function together as a system to collect, convey, channel, hold, inhibit, retain, detain, infiltrate or divert stormwater.

Stormwater Management Manual for the Puget Sound Basin (SWMM) or Manual means the technical manual prepared by Ecology for use by local governments and published in 1992, or statewide revisions when they become available, that contain descriptions of and design criteria for BMPs to prevent, control, or treat pollutants in stormwater.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Treatment BMPs means BMPs that are intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

USEPA means the United States Environmental Protection Agency.

Water Quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the state" as defined in Chapter 90.48 RCW which include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the state of Washington.

Acronyms

BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
FWPCA	Federal Water Pollution Control Act
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SWMM	Stormwater Management Manual for the Puget Sound Basin
SWPPP	Stormwater Pollution Prevention Plan
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality

Introduction

The Ecology stormwater pollution control program is based, in part, on the federal regulations of 40 CFR Parts 122, 123, and 124 Subchapter D (Water Programs) issued on November 16, 1990, and the implementation of section 402(p) of the Federal Clean Water Act. The goals of these federal regulations are to reduce or eliminate stormwater pollution from construction activity by requiring the implementation of technology based Stormwater Pollution Prevention Plans (SWPPP), and to eliminate surface water quality standards violations caused by stormwater.

Under the authority of Chapter 90.48 RCW, Ecology has expanded the scope of its stormwater program beyond the federal government's requirements. Ecology's program requires compliance with ground water quality and sediment management standards for those operations that are required to obtain an NPDES permit for a stormwater discharge to surface waters or storm drains.

To comply with 40 CFR Parts 122, 123, and 124, and pursuant to the provisions of Chapters 90.48 and 90.52 RCW and Chapter 173-226 WAC, all those who file a Notice of Intent and are covered under this baseline general permit (see Special Condition S2) shall comply with the following:

Special Conditions

S1. Application for Coverage

A. Notice of Intent (NOI) Submission Deadline

The permit application called a Notice of Intent (NOI) shall be submitted to Ecology on or before the date of the first public notice and at least 38 days prior to the start of construction activities. (see NOI instructions in Appendix 1)

B. Public Notice Requirement

At the time of application the permittee must publish a notice that they are seeking coverage under Ecology's general stormwater permit for construction activities. This notice must be published at least once each week for two consecutive weeks, in a single newspaper which has general circulation in the county in which the construction is to take place. Refer to the NOI instructions for public notice language requirements. State law requires a 30 day public comment period prior to permit coverage, therefore permit coverage will not be granted sooner than 31 days after the date of the last public notice.

C. Stormwater Pollution Prevention Plan (SWPPP) Deadlines

Permit coverage will not be granted until the permittee has indicated completion of the SWPPP or certified that development of a SWPPP in accordance with S9 of this permit will occur prior to the commencement of the construction activity. SWPPPs are not submitted to Ecology but retained on-site or within reasonable access to the site to be made available to Ecology and local governmental agencies upon request.

D. State Environmental Policy Act (SEPA) Notification

The permittee must comply with the SEPA process and provide the following information prior to receiving permit coverage: the type of SEPA document required, the date and agency which issued the final determination and whether or not the permittee is aware of any appeals of the adequacy of the SEPA document. If the above information is not supplied on the NOI it must be supplied in writing to Ecology prior to permit coverage.

S2. Permit Coverage

A. How to Obtain Coverage

Coverage under this general stormwater permit for construction activities may be obtained by submitting a NOI to Ecology to discharge "Stormwater Associated With Construction Activity" (Appendix 1). Ecology intends to notify applicants by mail of their status concerning coverage under this permit within 10 working days of Ecology's receipt of a complete NOI. An NOI is only deemed complete after it is fully filled out and signed, and a final SEPA determination has been made, the applicant has certified that a SWPPP will be developed prior to the start of construction, the 30 day public comment period has been satisfied, and all other NOI information has been supplied.

Upon receipt of a complete NOI Ecology will notify the applicant of their permit status either through written authorization of permit coverage or by sending a letter to the applicant giving a date when permit coverage will automatically commence. Coverage will begin from the date of Ecology's written authorization or will automatically commence on the date specified by Ecology.

Applicants which discharge stormwater associated with construction activity to a storm drain operated by any of the following municipalities shall submit a **copy** of the NOI to the municipality.

Seattle, King County, Snohomish County, Tacoma, Pierce County, Clark County, Spokane County, and Washington Department of Transportation (WSDOT), if discharge occurs within these permit areas.

B. Construction Activities Required to Seek Coverage

Construction Activity which results in the disturbance of five acres or more of land (or other minimum land area to be determined by federal regulation), including clearing, grading and excavation activities; and those sites or common plans of development or sale that will result in the total disturbance of five acres or more land area and also have a discharge of stormwater to a surface water or storm drain.

C. Construction Activities not Required to Apply

The following construction activities are not required to apply for coverage under this permit to discharge stormwater associated with construction activity:

1. Construction activities which discharge stormwater only to the ground through infiltration basins, dry wells, drain fields, and any other discharge to the ground and have no point source discharge to surface water or a municipal storm sewer;
2. Any part of a facility with a stormwater discharge resulting from remedial action conducted by the USEPA or Ecology or a potentially liable/responsible person under an order or consent decree issued under the Comprehensive Environmental Response, Compensation, and Liability Act. These facilities must still comply with the requirements in this general permit determined by Ecology to be applicable, relevant, and appropriate requirements under these laws;
3. Any emergency construction activity required to protect public health and safety;
4. Any construction activity for routine maintenance of existing facilities to maintain original line and grade, or hydraulic capacity.

D. Facilities EXCLUDED from Coverage Under This Permit

Ecology will not consider coverage for the following facilities:

1. Nonpoint source silvicultural activities; such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance from which there is natural runoff as excluded in 40 CFR Subpart 122.27;
2. Construction projects that are federally owned or operated or are on Tribal land, or discharge stormwater directly to tribal waters with EPA approved water quality standards, including portions of the Puyallup River and other waters on trust or restricted lands within the 1873 Survey Area of the Puyallup Tribe of Indians Reservation;
3. Stormwater discharges that originate from the site after construction activities have been completed and the site has undergone final stabilization;
4. Any facility covered under an existing NPDES individual or general permit in which stormwater management or treatment requirements or both are included for all stormwater discharges associated with construction activity.

E. Coverage for Significant Contributors of Pollutants

This permit may also cover any construction activity discharging stormwater which Ecology determines to be a significant contributor of pollutants to waters of the state of Washington or may reasonably be expected to cause a violation of a water quality standard.

F. Coverage for Discharges to Ground Water

This permit also covers discharges of stormwater associated with construction activity to ground water from any facility which has a discharge of stormwater to a surface water or a storm sewer requiring permit coverage.

S3. Authorized Discharges

This permit authorizes the discharge of stormwater and construction dewatering waters associated with construction activity to waters of the state of Washington and/or to municipal storm drains from construction sites owned or operated by permittees identified in Special Condition S2 (Permit Coverage).

S4. Discharge Prohibitions

- A. Discharges to a storm drain or surface water of process wastewater, domestic wastewater or noncontact cooling water not covered by an NPDES permit are prohibited.
- B. Discharges of stormwater to sanitary or combined sewers shall be limited pursuant to Chapter 173-245 WAC and WAC 173-226-100. Discharges of stormwater to sanitary or combined sewers shall not occur without the approval of the municipality which owns or operates the sanitary or combined sewer system.
- C. This permit does not authorize illicit discharges, including spills of oil or hazardous substances, nor does it relieve entities from obligations under state and federal laws and regulations pertaining to those discharges.

S5. Compliance with Standards

The permittee is responsible for achieving compliance with state of Washington surface water quality standards (Chapter 173-201A WAC), sediment management standards (Chapter 173-204 WAC), ground water quality standards (Chapter 173-200 WAC), and human health based criteria in the National Toxics Rule (Federal Register, Vol. 57, No. 246, Dec. 22, 1992, pages 60848-60923).

Where construction sites are not in compliance with these standards, the permittee shall take immediate action(s) to achieve compliance by implementing additional BMPs and/or improved maintenance of existing BMPs.

For permit compliance purposes compliance with standards means:

- i) An adequate SWPPP has been prepared and fully implemented;
- ii) The SWPPP and its implementation are adequate to prevent the discharge of toxic pollutants, floating materials, and erosion; and
- iii) All available and reasonable means have been taken to prevent the discharge of settleable solids and to reduce turbidity in discharges directly or indirectly to surface waters.

In determining compliance Ecology will consider:

- i) Weather conditions as related to design storms for BMPs;
- ii) Available dilution and background conditions in the receiving water if the SWPPP and its implementation are determined adequate; and
- iii) Other requirements of Chapters 173-200 WAC, 173-201A WAC, and 173-204 WAC.

S6. Sampling and Analysis

Sampling and analysis of stormwater for pollutants and ground water, surface water, or sediments for impacts of stormwater discharges are not required by this permit. However, sampling and analysis are encouraged and may be appropriate during the development and implementation of the SWPPP. Analysis conducted in accordance with 40 CFR Part 136 and Puget Sound Estuary Program Protocols is recommended but not required. Sampling procedures may be conducted in accordance with USEPA's NPDES Stormwater Sampling Guidance Document (EPA 833-B-92-001), July 1992, or Ecology guidance when it becomes available.

Sampling and analysis may be needed on a case-by-case basis for the discharge of construction dewatering waters to ensure compliance with standards. Dewatering in areas where the potential for ground water contamination exists should not be discharged without characterization of the ground water to be discharged. For guidance on the discharge of dewatering waters contact your Ecology Regional Office.

S7. Permit Fees

Annual payment of fees in accordance with RCW 90.48.465 is a condition of this permit. Fees for stormwater discharges covered under this permit shall be established by Chapter 173-224 WAC.

S8. Solid and Liquid Waste Disposal

The following requirements apply in the handling of solid and liquid wastes generated in compliance with the requirements of this general permit:

- A. Disposal of waste materials from maintenance activities, including liquids and solids from cleaning catch basins and other stormwater facilities, shall be conducted in accordance with the Minimum Functional Standards for Solid Waste Handling, Chapter 173-304 WAC, and where appropriate, the Dangerous Waste Regulations, Chapter 173-303 WAC.
- B. Leachate from the solid waste material handling and disposal sites shall not be discharged to state ground or surface waters without providing all known, available, and reasonable methods of treatment, nor shall such leachate cause violations of the state water quality standards for ground water or surface water or violations of sediment management standards.

S9. Stormwater Pollution Prevention Plan (SWPPP) for Construction Activities

A SWPPP for construction activity, including construction dewatering, shall be prepared and implemented in accordance with the schedule of Special Condition S1 and the requirements of this Special Condition.

A. Objectives

- 1. To implement Best Management Practices (BMPs) to minimize erosion and sediments from rainfall runoff at construction sites, and to identify, reduce, eliminate, or prevent the pollution of stormwater.
- 2. To prevent violations of surface water quality, ground water quality, or sediment management standards.
- 3. To prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of the receiving water by controlling peak rates and volumes of stormwater runoff at the permittee's outfalls and downstream of the outfalls.
- 4. To eliminate the discharges of unpermitted process wastewater, domestic wastewater, illicit discharges, and non-contact cooling water to stormwater drainage systems and surface waters of the state.

B. General Requirements

- 1. The site owner shall be the permittee and responsible for the implementation of a SWPPP. At construction sites for which a lease, easement, or other use agreement has been obtained from the site owner, the entity obtaining the use agreement shall be the permittee. The SWPPP shall be prepared sufficiently in advance of construction to allow the contractor sufficient time to plan the implementation of the SWPPP.
- 2. The permittee shall designate on the NOI, a contact person who will be available 24 hours a day to respond to emergencies, and to inquiries or directives from Ecology. The contact person shall have authority over the SWPPP implementation. While the site owner is ultimately responsible for proper activities under the general permit and for proper implementation of the SWPPP, both the owner and/or operator of the site may be held liable for any permit violations.

3. The permittee shall retain the SWPPP on-site or within reasonable access to the site and make it available upon request to Ecology and local governmental agencies with jurisdiction. If stormwater is discharged to a municipal storm drain system, the SWPPP shall be available to the municipality upon request. The public may obtain a copy of a permittee's SWPPP by request from Ecology.
4. The permittee shall retain the SWPPP and copies of the Notice of Intent, inspection reports and all other reports required by this permit for, at least three years after the date of final stabilization of the construction site. The permittee shall make these documents available upon request to Ecology and to the local government agencies with jurisdiction.
5. Reports on incidents, such as discharge of spills and other noncompliance notification (see G3), shall be included in the records.
6. Modifications:
 - a. Ecology may notify the permittee when the SWPPP does not meet one or more of the requirements of this Special Condition S9. Upon notification by Ecology, the permittee shall take appropriate action(s) to come into compliance with this Special Condition S9.
 - b. Ecology may require SWPPP and BMP modifications if compliance with standards is not being achieved as required in accordance with Special Condition S5.
 - c. The permittee shall modify the SWPPP whenever there is a change in design, construction, operation, or maintenance of any BMP which cause(s) the SWPPP to be less effective in controlling the pollutants.
 - d. Whenever a self-inspection reveals that the description of pollutant sources or the BMPs identified in the SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, the SWPPP shall be modified, as appropriate. The permittee shall provide for implementation of any modifications to the SWPPP in a timely manner.
7. Applicability of Current and Future Editions of the Stormwater Management Manual for the Puget Sound Basin (SWMM):

BMPs shall be selected from the most recent published edition of the SWMM, that has been available for at least 120 days prior to BMP selection, or other equivalent manuals available at the time of BMP selection or when the selection of additional BMPs is necessary. If new BMPs are required they shall be implemented in accordance with Special Condition S9.B.6.

C. SWPPP Contents and Requirements:

The SWPPP shall consist of and make provision for the following:

1. An Erosion and Sediment Control Plan:

The Erosion and Sediment Control Plan shall describe stabilization and structural practices, both of which shall be implemented to minimize erosion and the transport of sediments.

a. Stabilization Practices:

The Erosion and Sediment Control Plan shall include a description of stabilization Best Management Practices (BMPs), including site-specific scheduling of the implementation of the practices. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included in the plan. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased. The plan shall ensure that the following requirements are satisfied:

- i) All exposed and unworked soils shall be stabilized by suitable and timely application of BMPs.
- ii) Existing vegetation should be preserved where attainable. In the field, mark areas which are not to be disturbed, including setbacks, sensitive/critical areas and their buffers, trees and drainage courses shall be marked or flagged on site before construction activities are initiated. These areas should not be harmed when measures under the SWPPP and/or construction activities are undertaken.
- iii) Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes shall be stabilized in accordance with requirement a. above.
- iv) Stabilization adequate to prevent erosion of outlets and adjacent stream banks shall be provided at the outlets of all conveyance systems.
- v) All storm drain inlets made operable during construction shall be properly maintained.
- vi) Wherever construction vehicle access routes intersect paved roads, provisions must be made to minimize the transport of sediment (mud) onto the paved road. If sediment is transported onto a road surface, the roads adjacent to the construction site shall be cleaned on a regular basis. Street washing shall be allowed only after other methods to prevent the transport or to remove the sediments are unsuccessful.

b. Structural Practices:

In addition to stabilization practices, the Erosion and Sediment Control Plan shall include a description of structural BMPs to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Such practices may include silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and sediment basins. Structural practices should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the Federal Clean Water Act. The plan shall ensure that the following requirements are satisfied:

-
- i) Prior to leaving the site, stormwater runoff shall pass through a sediment pond or sediment trap, or other appropriate BMPs.
 - ii) Properties adjacent to the project site shall be protected from sediment deposition.
 - iii) Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMPs intended to trap sediment on-site shall be constructed as a first step in grading. These BMPs shall be functional before land disturbing activities take place. Earthen structures used for sediment control such as dams, dikes, and diversions shall be stabilized as soon as possible.
 - iv) Properties and waterways downstream from the construction site shall be protected from erosion due to increases in volume, velocity, and peak flow of stormwater runoff from the project site.
 - v) All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on-site. Disturbed soil areas resulting from removal shall be permanently stabilized.

c. Selection of Stabilization and Structural BMPs:

Permittees within the Puget Sound Basin shall select from BMPs described in Volume II of the most recent edition of Ecology's Stormwater Management Manual (SWMM) that has been available at least 120 days prior to the BMP selection, or other equivalent and appropriate BMPs to comply with the requirements listed in sections a. and b. above.

Permittees outside the Puget Sound Basin shall select from BMPs described in the Erosion and Sediment Control Handbook, by Goldman et al; Volume II of the most recent edition of Ecology's SWMM, that has been available at least 120 days prior to the BMP selection, as adapted for local conditions using best professional judgment; or other equivalent and appropriate BMPs to comply with the requirements listed in subsections a. and b. above.

d. Inspection and Maintenance:

All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. All on-site erosion and sediment control measures shall be inspected at least once every seven days and within 24 hours after any storm event of greater than 0.5 inches of rain per 24 hour period.

e. Recordkeeping:

Reports summarizing the scope of inspections, the personnel conducting the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP, and actions taken as a result of these inspections shall be prepared and retained as part of the SWPPP.

f. Compliance Reporting Requirement:

Compliance with the maintenance and schedule requirements of the SWPPP and other schedule requirements of this permit constitutes compliance with the reporting requirements of WAC 173-226-180.

g. Format:

The Erosion and Sediment Control Plan shall consist of two parts: a narrative and a set of site plans (drawings). Permittees may refer to Volume II, *Construction Stormwater Pollution Prevention*, of Ecology's SWMM for guidance on the content and format.

2. Control of Pollutants Other Than Sediment on Construction Sites:

All pollutants other than sediment that occur on-site during construction shall be handled and disposed of in a manner that does not cause contamination of stormwater. Chapter II-3 of the SWMM can be referenced for guidance in controlling other potential pollutants.

3. Coordination with Local Requirements:

This permit does not relieve the permittee of compliance with any more stringent requirements of local government.

Also, as required by the Puget Sound Water Quality Management Plan, local governments within the Puget Sound Basin are to adopt requirements for construction which are at least equivalent to the requirements listed in Volume I, *Minimum Technical Requirements*, of Ecology's SWMM. Where Ecology has determined such requirements to be equivalent, compliance with these requirements meets the SWMM requirements of this permit.

S10. Notice of Termination (NOT)

After the site has undergone final stabilization, and all stormwater discharges from soil disturbing activities have ceased, and all exposed soils have a permanent vegetative cover, or equivalent permanent stabilization measure which prevent erosion, the permittee shall submit a Notice of Termination form (Appendix 2 of this permit). A Notice of Termination, that is signed in accordance with General Condition G20 of this permit, will end permit coverage and the responsibility of the permittee(s) to be subject to the conditions of this permit. The permittee is responsible for submitting the termination notice in order to end permit coverage. Unless the permit is terminated, Ecology will continue to assess a fee for the permit.

Where the site owner changes, the site owner listed as the permittee shall submit a NOT that is signed in accordance with General Condition G20 of this permit. The new site owner shall submit a new Notice of Intent.

General Conditions

G1. Discharge Violations:

All discharges and activities authorized by this permit shall be consistent with the terms and conditions of this permit.

G2. Proper Operation and Maintenance:

The Permittee shall at all times properly operate and maintain all facilities and systems of collection, treatment, and control (and related appurtenances) which are installed or used by the Permittee for pollution control.

G3. Non-compliance Notification:

If for any reason, the Permittee does not comply with, or will be unable to comply with conditions specified in the permit, the Permittee shall, at a minimum, provide the Department of Ecology (Ecology) with the following information:

- A. A description of the nature and cause of noncompliance, including the quantity and quality of any unauthorized waste discharges;
- B. The period of noncompliance, including exact dates and times and/or the anticipated time when the Permittee will return to compliance; and
- C. The steps taken, or to be taken, to reduce, eliminate, and prevent recurrence of the noncompliance.

In addition, the Permittee shall take immediate action as expeditiously as practicable, to stop, contain, and clean up any discharge of spills and take all reasonable steps to minimize any adverse impacts to waters of the state and correct the problem. The Permittee shall notify Ecology by telephone so that an investigation can be made to evaluate any resulting impacts and the corrective actions taken to determine if additional action should be taken.

In the case of any discharge which could constitute a threat to human health, welfare, or the environment, 40 CFR Part 122 requires that the information specified in Sections G3.A., G3.B., and G3.C., above, shall be provided not later than 24 hours from the time the Permittee becomes aware of the circumstances. If this information is provided orally, a written submission covering these points shall be provided within five days of the time the Permittee becomes aware of the circumstances, unless Ecology waives or extends this requirement on a case-by-case basis.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the conditions of this permit or the resulting liability for failure to comply.

G4. Bypass Prohibited:

The intentional bypass of stormwater from all or any portion of a stormwater treatment system whenever the design capacity of the treatment system is not exceeded, is prohibited unless the following conditions are met:

- A. Bypass is: 1) unavoidable to prevent loss of life, personal injury, or severe property damage; or 2) necessary to perform construction or maintenance-related activities essential to meet the requirements of the Clean Water Act and authorized by administrative order; and

- B. There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated stormwater, maintenance during normal periods of equipment down time, or temporary reduction or termination of production;

G5. Right of Entry:

The Permittee shall allow an authorized representative of Ecology, upon the presentation of credentials and such other documents, as may be required by law:

- A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit;
- B. To have access to and copy at reasonable times any records that must be kept under the terms of the permit;
- C. To inspect at reasonable times any monitoring equipment or method of monitoring required in the permit;
- D. To inspect at reasonable times any collection, treatment, pollution management, or discharge facilities; and
- E. To sample at reasonable times any discharge of pollutants.

G6. Revocation of Coverage:

Pursuant with Chapter 43.21B RCW and Chapter 173-226 WAC, the director may terminate coverage under this General Permit. Cases where coverage may be terminated include, but are not limited to the following:

- A. Violation of any term or condition of the general permit;
- B. Obtaining coverage under a general permit by misrepresentation or failure to disclose fully all relevant facts;
- C. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;
- D. A determination that the permitted activity endangers human health or the environment, or contributes significantly to water quality standards violations;
- E. Failure or refusal of the permittee to allow entry as required in RCW 90.48.090;
- F. Nonpayment of permit fees assessed pursuant to RCW 90.48.610;
- G. Failure of the permittee to satisfy the public notice requirements of WAC 173-226-130(6); or

Revocation of coverage under a general permit may be initiated by Ecology or requested by any interested person.

G7. Transfer of Coverage:

Pursuant with Chapter 43.21 RCW and Chapter 173-226 WAC, the director may require any discharger authorized by this general permit to apply for and obtain an individual permit or to apply for coverage under an industry-specific general permit.

G8. General Permit Modification and Revocation:

General permits may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

- A. A change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under the general permit;
- B. Effluent limitation guidelines or standards are promulgated pursuant to the FWPCA or chapter 90.48 RCW, for the category of dischargers covered under the general permit;
- C. A water quality management plan containing requirements applicable to the category of dischargers covered under the general permit is approved; or
- D. Information is obtained which indicates that cumulative effects on the environment from dischargers covered under the general permit are unacceptable.

G9. Permit Coverage Modification:

A Permittee who knows, or has reason to believe, that any activity has occurred or will occur which would constitute cause for revocation or transfer of coverage under General Conditions G6 and G7 respectively, or 40 CFR Subpart 122.62, must report such plans, or such information to Ecology. Activities which shall be reported include facility expansions, production increases, or process modifications which will: 1) result in new or substantially increased discharges of pollutants into stormwater or a change in the nature of the discharge of pollutants into stormwater; or 2) violate the terms and conditions of this permit. Ecology may then require submission of a new Notice of Intent or an application for an individual permit.

Submission of a new Notice of Intent for coverage under this or another general permit, or an application for an individual permit does not relieve the Permittee of the duty to comply with the terms and conditions of the existing permit until the new notice of intent has been approved or an individual permit has been issued.

G10. Toxic Pollutants:

If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation upon such pollutant in this general permit, Ecology shall institute proceedings to modify or revoke and reissue this general permit to conform to the new toxic effluent standard or prohibition.

G11. Other Requirements of Title 40 Code of Federal Regulations:

All other requirements of 40 CFR Subpart 122.41 and 122.42 are incorporated in this permit by reference.

G12. Compliance With Other Laws and Statutes:

Nothing in this permit shall be construed as excusing the Permittee from compliance with any applicable federal, state, or local laws, ordinances, or regulations.

G13. Additional Monitoring:

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G14. Removed Substances:

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater shall not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G15. Duty to Reapply:

The Permittee must reapply for coverage under this general permit, at least 180 days prior to the specified expiration date of this permit. An expired general permit continues in force and effect until a new general permit is issued or until the department cancels it. Only those facilities which have reapplied for coverage under the general permit are covered under the continued permit.

G16. Transfer of Permit Coverage:

Coverage under this permit is not transferable to any other person or entity except in compliance with WAC 173-226-210. The new operator shall submit a new Notice of Intent for coverage under this or another general permit, or apply for and obtain an individual discharge permit. The previous operator shall submit a Notice of Termination.

G17. Requests to be Excluded from Coverage Under a General Permit:

Any discharger authorized by a general permit may request to be excluded from coverage under the general permit by applying for an individual permit. The discharger shall submit to the director an application as described in WAC 173-220-040 (NPDES permit program), with reasons supporting the request. The director will either issue an individual permit or deny the request with a statement explaining the reason for denial.

G18. Appeals:

- A. The terms and conditions of this general permit, as they apply to the appropriate class of dischargers, are subject to appeal by any person within 30 days of issuance of this general permit, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.
- B. The terms and conditions of this general permit, as they apply to an individual discharger, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that discharger. Consideration of an appeal of general permit coverage of an individual discharger is limited to the general permit's applicability or nonapplicability to that individual discharger.
- C. The appeal of general permit coverage of an individual discharger does not affect any other dischargers covered under this general permit. If the terms and conditions of this general permit are found to be inapplicable to any individual discharger(s), the matter shall be remanded to the department for consideration of issuance of an individual permit or permits.

G19. Record Keeping Requirements:

The permittee shall maintain records required as a condition of the application for, as a condition of coverage under, and as conditions of this permit.

The permittee shall retain for a minimum of five (5) years reports required by this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the department or regional administrator.

Upon termination of coverage under this permit, the owner shall retain all records and reports required under this General Condition for at least three (3) years from the date of termination of coverage under this permit.

G20. Signatory Requirements:

All Notices of Intent and Termination, plans (including the SWPPP), reports, certifications or information either submitted to the Department of Ecology or to the operator of a municipal storm sewer system, (or that this permit requires be maintained by the permittee), shall be signed as follows:

- A. In the case of corporations, by a responsible corporate officer or a duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates.
- B. In the case of a partnership, by a general partner.
- C. In the case of a sole proprietorship, by the proprietor.
- D. In the case of a municipal, state or other public agency, by either a principal executive officer, ranking elected official, or other duly authorized employee.

G21. Use of Registered or Accredited Laboratories:

Except for flow, temperature and internal process control parameters, sampling and analysis data required as a condition of coverage under this general permit shall be prepared by a laboratory accredited under the provisions of Chapter 173-50 WAC (Accreditation of Environmental Laboratories).

G22. Commencement of Coverage Under a General Permit:

Unless the department responds in writing to an application for coverage, coverage of a discharger under a general permit will automatically commence on the later of the following:

- A. On the effective date of the general permit;
- B. On the 31st day following the end of the 30 day comment period required by WAC 173-226-130(5)(iv) for new operations;
- C. On the 31st day following receipt by the department of a completed application for coverage under a general permit; or
- D. On the coverage date specified in this permit.

G23. Termination of coverage upon issuance of an individual permit or an industry-specific general permit:

When an individual permit is issued to a discharger otherwise subject to this general permit, the applicability of the general permit to that permittee is automatically terminated on the effective date of the individual permit.

When coverage under an industry-specific general permit is granted to a discharger otherwise subject to this general permit, the applicability of this general permit to that permittee is automatically terminated 90 days after the effective date of the industry-specific general permit.

G24. Severability:

The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

Application Instructions for a General Permit to Discharge Stormwater Associated with CONSTRUCTION ACTIVITY

Introduction

This is an instruction document for the preparation of an application, referred to as a Notice of Intent (NOI), for coverage under a National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges associated with construction activity in the state of Washington. This NPDES General Permit (hereinafter called the General Permit) applies to stormwater discharges to surface waters and to storm drains.

Owners of construction sites of less than five acres, or which will retain on-site and discharge to the ground all stormwater associated with construction activity are not required to apply for coverage under the construction stormwater general permit.

Who Must Apply

The owner of a construction site, where five acres or more of total land area will be disturbed must apply for coverage under the general permit if they have a discharge of stormwater associated with construction activity to a surface water or to a storm drain.

At sites for which a lease, easement, or other use agreement has been obtained from the site owner, the entity obtaining the use agreement shall be the permittee. In cases where the owner(s) of a site is (are) represented by a developer, the developer should be the permittee.

At sites where less than five acres of total land area will be disturbed, the owner is not required to apply unless the construction is "part of a larger common plan of development or sale." "Part of a larger common plan of development or sale" is a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

Industrial facilities already covered by the Industrial Baseline General Permit for their industrial activity, and which are planning construction which will disturb five or more acres of total land area, must complete this NOI.

When to Apply

The permit application called a Notice of Intent (NOI) shall be submitted to Ecology on or before the date of the first public notice and at least 38 days prior to the start of construction activities (see Section IX). Ecology must have the permit application during the public comment period in order to provide the public access to the applications as required by WAC 173-226-130(5).
NOTE: Ecology cannot grant permit coverage until 31 days after the date of the second Public Notice.

Ecology intends to notify applicants by mail of their status concerning coverage under the permit within 10 working days of Ecology's receipt of a complete NOI. An NOI is only deemed complete after a final SEPA determination has been made, the applicant has certified that a SWPPP will be developed prior to the start of construction, the 30 day public comment period has been satisfied, and all other NOI information has been supplied.

Upon receipt of a complete NOI Ecology will notify the applicant of their status either through written authorization of permit coverage or by sending a letter to the applicant giving a date when permit coverage will automatically commence. Coverage will begin from the date of Ecology's written authorization or will automatically commence on the date specified in Ecology's letter.

Where to Apply

Mail the signed NOI to the following Ecology office:

Washington Department of Ecology
Stormwater Unit
P.O. Box 47696
Olympia, WA 98504-7696

Applicants who discharge stormwater associated with construction activity to a storm drain operated by any of the following municipalities shall also submit a copy of the NOI to the municipality:

Seattle, King County, Snohomish County, Tacoma, Pierce County, Clark County, Spokane County, Washington Department of Transportation.

Fees

There is no application fee. You will be billed for permit fees after the permit is issued. Call (360) 407-6425 for questions relating to fees.

LINE-BY-LINE INSTRUCTIONS FOR COMPLETING THE NOI

Completing the NOI; Notification of Coverage

The NOI is an official document committing the permittee to compliance with the requirements of the General Permit. It should be completed accurately, completely and legibly.

Please print in ink or type.

Change of Information: Check this box if information included in a previously submitted NOI application in which permit coverage was granted has changed. An example of a change could be a new contact person, billing address, or total area to be disturbed.

Include your assigned permit number in the upper right hand corner of the NOI. Your assigned permit number is in the upper right hand corner of the first (title) page of your permit. Complete only those sections of the NOI that require changes. Please submit a transmittal letter which confirms/explains the change of information in the NOI.

Permit Number: Use only if you are reporting a "Change of Information"

Section I - Contact Person

Give the name, address, and telephone number of the person who is available 24 hours a day to respond to emergencies, and to inquiries or directives from Ecology. The contact person should be someone who is completely familiar with the site, and charged with overseeing compliance with the permit requirements. This person could be an employee, a consultant, a developer, or a contractor.

Section II - Owner/Representative of Site

Give the name, address and the telephone number of the person, company, firm, public corporation, municipality or any other entity which owns or legally represents the site. If the owner is the same as the contact person, enter "same as contact person" on the first line. The permit and all other correspondence will be sent to this address. An exception to this information is the billing address.

Section III - Site Address

Enter the street address or location description (eg. Intersection of B & C streets, also include the county) for the construction site. Construction sites which do not have a street address must also provide a legal description of the location either in the space provided or by an attachment.

Section IV - Billing Address

Indicate where the annual and final permit fee invoices should be sent. Also provide a contact person who can answer any questions on the billing invoices.

Section V - Receiving Water Information

In Part A, check the appropriate boxes for receiving water information for the stormwater discharges from the construction site.

In Part A.1 - Check this box if stormwater leaving your site enters a storm drain system, and indicate the name of the owner of the storm drain system; such as a municipality, flood control district, utility or private entity (e.g. industrial park)

In Part A.2 - Check this box if stormwater flows directly or indirectly into or over adjacent properties, through ditches or right-of-ways to surface waters of the State; the definition of a surface water includes lakes, rivers, ponds, streams, salt waters, and wetlands.

In Part A.3 - Check this box if stormwater from your site is discharged to the ground. Indicate by what method by checking one of the three choices. If you discharge stormwater only to the ground, you are not required to apply for coverage under the general permit.

In Part B, indicate the name of the first downstream receiving water(s) which has an assigned name. If stormwater is discharged to more than one receiving water, the names of each receiving water must be listed. Indicate whether the stormwater is initially discharged to an unnamed receiving water(s) prior to flowing into the named receiving water(s) by placing a check in the appropriate box. If the discharge is to an unnamed surface water which does not eventually drain to a named surface water (e.g. a pond with no outlet), enter a description of the receiving water (e.g., ponds, creek, etc.) and check "Yes".

Section VI - Construction Activity Information

Give the total land area in acres which will be disturbed during all phases of the construction project. This includes all clearing, grading, and excavating, and any other activity which disturbs the surface of the land.

Give the projected month/year when the construction activity will begin, and the anticipated month/year of completion of all soil disturbing and soil stabilization activity.

Section VII - Stormwater Pollution Prevention Plan (SWPPP)

Applicants must develop and implement the SWPPP prior to the commencement of construction activities(s). Applicants may indicate completion of the SWPPP on the NOI form or certify that development of a SWPPP will occur prior to the commencement of construction activity. If not Ecology must be notified that a SWPPP will be developed prior to the start of construction, before permit coverage can be granted.

A stormwater pollution prevention plan (SWPPP) for construction sites is a documented plan primarily intended to control erosion and sedimentation caused by construction activity. These plans are not submitted to Ecology, but kept on-site or within reasonable access to the site, to be made available to Ecology and local governmental agencies upon request.

Section VIII - State Environmental Policy Act (SEPA) Compliance:

Ecology cannot cover the applicant under the General Permit until the following SEPA information has been provided and the SEPA process has been satisfied.

Provide the following information:

- Whether SEPA review has been completed or exempt.
- The type of SEPA document prepared, i.e., a Determination of Nonsignificance (DNS) or a Final Environmental Impact Statement (EIS). The name of the agency which issued the DNS, the Final EIS, or which decided that the project was exempt from SEPA. Usually this agency is a representative of local government such as a city or county.
- Provide the date the agency issued the DNS or Final EIS.
- Whether you are aware of an administrative or judicial appeal of the adequacy of the SEPA document. If you check the yes box, provide a letter explaining the issues and status of the appeal.

If necessary the SEPA follow-up information may be supplied in writing after submission of the NOI.

Section IX - Public Notice

The applicant must complete the 30 day public notice requirement prior to receiving permit coverage. The notice must be published at least once each week for 2 consecutive weeks, in a single newspaper which has general circulation in the county in which the construction is to take place with the following information:

- A statement that the applicant is seeking coverage under the Washington Department of Ecology's NPDES General Permit for Stormwater Discharges Associated with Construction Activities;
- The name, address and location of the construction site;
- The name and address of the applicant;
- A description of the applicant's construction activities and areas from which a stormwater discharge will occur, name(s) of receiving water(s); and
- The statement:
"Any person desiring to present their views to the Department of Ecology concerning this application, or interested in the department's action on this application may notify the Department of Ecology in writing within 30 days of the last date of publication of this notice. Comments can be submitted to: Department of Ecology, P.O. Box 47696, Olympia, WA 98504-7696."

NOTE: Ecology is no longer requiring the submittal of the affidavit of publication. However, a typed copy of what will be submitted to the newspaper must be sent along with the NOI. The dates that the first and second public notices will run and the name of the newspaper in which the public notices will appear must also be provided.

Please note: that state law requires a 30 day public comment period prior to permit coverage, therefore permit coverage will not be granted sooner than 31 days after the date of the second public notice. The public notice may be published simultaneously with other notices such as State Environmental Policy Act notices, and Shoreline Permit notices provided the NOI is sent to Ecology on or before the date of the first public notice.

Section X - Regulatory Status

Parts A, B, and C request information on any existing NPDES (including stormwater permit for industrial activity), State Waste Discharge, and Air permits issued to the facility. In Washington, air emission permits are issued by local agencies or Ecology. They can be referred to by various names such as a permit, an order, or a Notice of Construction. In part D, indicate if your facility has been assigned a State/USEPA Hazardous Waste ID number, and list that number.

Section XI - Certification by Permittee(s)

This section should be read closely by the applicant. The responsible official or authorized representative of the owner shall print their name for clarity, then sign and date the document on the lines provided.

In the case of corporations, the NOI must be signed by a responsible corporate officer or a duly authorized representative, if such representative is responsible for the overall operation of the site from which the discharge originates.

For a partnership, the NOI must be signed by a general partner.

For a sole proprietorship, the NOI must be signed by the proprietor.

For a municipal, state or other public agency, the NOI must be signed by either a principal executive officer, ranking elected official, or other duly authorized employee.

QUESTIONS

Questions concerning proper completion of this form can be directed to the Department of Ecology by calling (360) 407-6437.

APPENDIX E

Hydraulic Project Approval (#1) – Modify Existing Structure



HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW
RECEIVED

State of Washington
Department of Fish and Wildlife
Habitat Program
600 Capitol Way North, MS 3155
Olympia, Washington 98501-1091

OCT 15 2003

DATE OF ISSUE: October 13, 2003

OLYMPIC REGION

LOG NUMBER: ST-G0105-01

At the request of, Kim Mueller, on October 13, 2003, this Hydraulic Project Approval (HPA), which now supersedes all previous HPAs for this project, is a change of the original HPA issued October 13, 2003.

<u>PERMITTEE</u>	<u>AUTHORIZED AGENT OR CONTRACTOR</u>
Washington State Department of Transportation ATTENTION: Jeff Sawyer PO BOX 47440 Olympia, WA 98504-7440 360-357-2713	Not Applicable

PROJECT DESCRIPTION: Modify Permanent Fixed Freshwater Crossing Structure (Add HOV Lane)

PROJECT LOCATION: SR 16 MP .85 - 4.48
LAT - N47.2440 / LONG W122.50556

#	<u>WRIA</u>	<u>WATER BODY</u>	<u>TRIBUTARY TO</u>	<u>1/4 SEC.</u>	<u>SEC.</u>	<u>TOWNSHIP</u>	<u>RANGE</u>	<u>COUNTY</u>
1	11.6007	Snake Lake	Snake Lake	SE	12	20 North	02 East	Pierce

PROVISIONS

- TIMING LIMITATIONS:** The project may begin **immediately** and shall be completed by **October 15, 2006**,
- NOTIFICATION REQUIREMENT:** The permittee or contractor shall notify the Area Habitat Biologist (AHB) listed below of the project start date. Notification shall be received by the AHB at least three working days prior to the start of construction activities. The notification shall include the permittee's name, project location, starting date for work, and the control number for this Hydraulic Project Approval.
- Work shall be accomplished per plans and specifications entitled, SR 16 Union to Jackson, submitted to the Washington Department of Fish and Wildlife August 28, 2003, except as modified by this Hydraulic Project Approval. These plans reflect design criteria per Chapter 220-110 WAC. These plans reflect mitigation procedures to significantly reduce or eliminate impacts to fish resources. A copy of these plans shall be available on site during construction.

CONSTRUCTION ACTIVITIES

- Removal and/or modification of the existing structure shall be accomplished so the structure and associated material does not enter the water. Material shall be disposed of so it will not re-enter the water.
- Riprap materials shall not be used within the ordinary high water line.
- Removal and/or modifications of existing structures shall be accomplished by mechanical means. This Hydraulic Project Approval does not authorize blasting.

EQUIPMENT



HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW

State of Washington
Department of Fish and Wildlife
Habitat Program
600 Capitol Way North, MS 3155
Olympia, Washington 98501-1091

DATE OF ISSUE: October 13, 2003

LOG NUMBER: ST-G0105-01

At the request of, Kim Mueller, on October 13, 2003, this Hydraulic Project Approval (HPA), which now supersedes all previous HPAs for this project, is a change of the original HPA issued October 13, 2003.

7. Equipment used for this project shall operate stationed on barge or secured work platform.
8. Crossings within the wetted perimeter of the water body by tracked or wheeled equipment are not authorized by this HPA.
9. The use of equipment below the ordinary high water line shall be limited to that necessary to gain position for work.
10. Equipment used for this project shall be free of external petroleum-based products while working around the stream. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and undercarriage of equipment prior to its working below the ordinary high water line. Equipment shall be checked daily for leaks and any necessary repairs shall be completed prior to commencing work activities along the stream.

VEGETATION

11. Aquatic vegetation shall not be removed or disturbed, except for that incidental to the physical movement of piles into the substrate.
12. Shoreline vegetation shall not be removed or disturbed, except for that incidental to the physical movement of equipment for access to the work area.
13. Alteration or disturbance of the bank and bank vegetation shall be limited to that necessary to construct the project. Within seven calendar days of project completion, all disturbed areas shall be protected from erosion using vegetation or other means. Within one year of project completion, the banks, including riprap areas, shall be revegetated with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

FISH

14. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), operations shall cease and the Washington Department of Fish and Wildlife at 253-845-0939 x110 shall be contacted immediately. Work shall not resume until further approval is given by the Washington Department of Fish and Wildlife.

WATER QUALITY

15. Every effort shall be taken during all phases of this project to ensure that sediment-laden water is not allowed to enter the water.
16. Structures containing concrete shall be sufficiently cured prior to contact with water to avoid leaching. Fresh concrete shall not be allowed to come into contact with state waters.
17. Wastewater from project activities and water removed from within the work area shall be routed to an area landward of the ordinary high water line to allow removal of fine sediment and other contaminants prior to being discharged to the water body.



HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW

State of Washington
Department of Fish and Wildlife
Habitat Program
600 Capitol Way North, MS 3155
Olympia, Washington 98501-1091

DATE OF ISSUE: October 13, 2003

LOG NUMBER: ST-G0105-01

At the request of, Kim Mueller, on October 13, 2003, this Hydraulic Project Approval (HPA), which now supersedes all previous HPAs for this project, is a change of the original HPA issued October 13, 2003.

18. All waste material such as construction debris, silt, excess dirt or overburden resulting from this project shall be deposited above the limits of flood water in an approved upland disposal site.
19. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the water.
20. Fresh concrete or concrete by-products shall not be allowed to enter the water at any time during this project. All forms used for concrete shall be completely sealed to prevent the possibility of fresh concrete from getting into the water.

SEPA: EIS by WSDOT final on January 14, 2000.

APPLICATION ACCEPTED: September 15, 2003

ENFORCEMENT OFFICER: Prater 190 [P2]

Travis Nelson (360) 893-1721
Area Habitat Biologist

for Director
WDFW

ENDANGERED SPECIES DISCLAIMER

Compliance with this HPA does not ensure compliance with the federal Endangered Species Act or any other local, state or federal laws.

GENERAL PROVISIONS

This Hydraulic Project Approval (HPA) pertains only to the provisions of the Fisheries Code (RCW 77.55 - formerly RCW 75.20). Additional authorization from other public agencies may be necessary for this project.

This HPA shall be available on the job site at all times and all its provisions followed by the permittee and operator(s) performing the work.

This HPA does not authorize trespass.

The person(s) to whom this HPA is issued may be held liable for any loss or damage to fish life or fish habitat which results from failure to comply with the provisions of this HPA.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.

All HPAs issued pursuant to RCW 77.55.100 or 77.55.200 are subject to additional restrictions, conditions or revocation if the Department of Fish and Wildlife determines that new biological or physical information indicates the need for such action. The permittee has the right pursuant to Chapter 34.04 RCW to appeal such decisions. All HPAs issued pursuant to RCW 77.55.110 may be modified by the Department of Fish and Wildlife due to changed conditions after consultation



HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW

State of Washington
Department of Fish and Wildlife
Habitat Program
600 Capitol Way North, MS 3155
Olympia, Washington 98501-1091

DATE OF ISSUE: October 13, 2003

LOG NUMBER: ST-G0105-01

At the request of, Kim Mueller, on October 13, 2003, this Hydraulic Project Approval (HPA), which now supersedes all previous HPAs for this project, is a change of the original HPA issued October 13, 2003.

with the permittee: PROVIDED HOWEVER, that such modifications shall be subject to appeal to the Hydraulic Appeals Board established in RCW 77.55.170.

APPEALS - GENERAL INFORMATION

IF YOU WISH TO APPEAL A DENIAL OF OR CONDITIONS PROVIDED IN A HYDRAULIC PROJECT APPROVAL, THERE ARE INFORMAL AND FORMAL APPEAL PROCESSES AVAILABLE.

A. INFORMAL APPEALS (WAC 220-110-340) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.100, 77.55.110, 77.55.140, 77.55.190, 77.55.200, and 77.55.290:

A person who is aggrieved or adversely affected by the following Department actions may request an informal review of:

- (A) The denial or issuance of a HPA, or the conditions or provisions made part of a HPA; or
- (B) An order imposing civil penalties.

It is recommended that an aggrieved party contact the Area Habitat Biologist and discuss the concerns. Most problems are resolved at this level, but if not, you may elevate your concerns to his/her supervisor. A request for an INFORMAL REVIEW shall be in WRITING to the Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington 98501-1091 and shall be RECEIVED by the Department within 30-days of the denial or issuance of a HPA or receipt of an order imposing civil penalties. The 30-day time requirement may be stayed by the Department if negotiations are occurring between the aggrieved party and the Area Habitat Biologist and/or his/her supervisor. The Habitat Protection Services Division Manager or his/her designee shall conduct a review and recommend a decision to the Director or its designee. If you are not satisfied with the results of this informal appeal, a formal appeal may be filed.

B. FORMAL APPEALS (WAC 220-110-350) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.100 OR 77.55.140:

A person who is aggrieved or adversely affected by the following Department actions may request a formal review of:

- (A) The denial or issuance of a HPA, or the conditions or provisions made part of a HPA;
- (B) An order imposing civil penalties; or
- (C) Any other "agency action" for which an adjudicative proceeding is required under the Administrative Procedure Act, Chapter 34.05 RCW.

A request for a FORMAL APPEAL shall be in WRITING to the Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington 98501-1091, shall be plainly labeled as "REQUEST FOR FORMAL APPEAL" and shall be RECEIVED DURING OFFICE HOURS by the Department within 30-days of the Department action that is being challenged. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, the deadline for requesting a formal appeal shall be within 30-days of the date of the Department's written decision in response to the informal appeal.

C. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.110, 77.55.200, 77.55.230, or 77.55.290:

A person who is aggrieved or adversely affected by the denial or issuance of a HPA, or the conditions or provisions made part of a HPA may request a formal appeal. The request for FORMAL APPEAL shall be in WRITING to the Hydraulic Appeals Board per WAC 259-04 at Environmental Hearings Office, 4224 Sixth Avenue SE, Building Two - Rowe Six, Lacey, Washington 98504; telephone 360/459-6327.



HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW

State of Washington
Department of Fish and Wildlife
Habitat Program
600 Capitol Way North, MS 3155
Olympia, Washington 98501-1091

DATE OF ISSUE: October 13, 2003

LOG NUMBER: ST-G0105-01

At the request of, Kim Mueller, on October 13, 2003, this Hydraulic Project Approval (HPA), which now supersedes all previous HPAs for this project, is a change of the original HPA issued October 13, 2003.

D. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS RESULTS IN FORFEITURE OF ALL APPEAL RIGHTS. IF THERE IS NO TIMELY REQUEST FOR AN APPEAL, THE DEPARTMENT ACTION SHALL BE FINAL AND UNAPPEALABLE.

APPENDIX F

Not Used

APPENDIX G

Department of The Army Section 404 Nationwide Permit



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

NOV 19 2004

Regulatory Branch

Washington State Dept. of Transportation
Mr. Jeff Sawyer
Post Office Box 47417
Olympia, Washington 98504-7417

Reference: 200301129
Washington State
Dept. of Transportation

Ladies and Gentlemen:

By letter dated October 7, 2004, you provided a revised wetland mitigation plan for the above-referenced work that was verified by Nationwide Permit (NWP) 14 on May 6, 2004, and as reverified on August 25, 2004. NWP 14 authorized your proposal to widen State Route (SR) 16 from Union Avenue to Jackson Avenue and place fill in 0.127 acres of wetlands in the Leach Creek basin at the City of Tacoma, in Pierce County, Washington.

We reviewed your revised mitigation plan and have determined that the work is still authorized by NWP 14 provided you meet the conditions described in our May 6, 2004, and August 25, 2004, letters, copies enclosed, and comply with the following special condition which shall supercede special condition "c" of the previous verification letters. All other terms and conditions contained in the original verification remain in full force and effect.

c. The permittee shall implement and abide by the mitigation plan titled "Wetland Mitigation Plan for the City of Tacoma and the U.S. Army Corps (Corps) of Engineers, SR 16 Union Avenue to Jackson Avenue HOV" dated September 2004 and clarifying emails dated February 23, 2004, received from Washington State Department of Transportation (WSDOT). Mitigation monitoring reports will be due annually for years 1, 2, 3, 5, 7, and 10 for forested systems from the due date of the as-built drawings of the mitigation site. All reports must be submitted to the Corps, Seattle District, Regulatory Branch and must prominently display the reference numbers 200301129 and OYB-4-012713.

If you have any questions, please contact me at (206) 764-6912 or via email at Kathryn.J.Stenberg@nws02.usace.army.mil.

Sincerely,

[Handwritten signature]

Kate Stenberg, Transportation Team Lead
South Application Review Section

Enclosures

[illegible]



DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

MAY 6 2004

REPLY TO
ATTENTION OF

Regulatory Branch

Washington State Department of Transportation
Mr. Jeff Sawyer
Post Office Box 47440
Olympia, Washington 98504-7440

Reference: 200301129
Washington State
Dept. of Transportation

Dear Mr. Sawyer:

Our regulatory program utilizes a series of nationwide permits (NWP) to authorize specific categories of work that have minimal impact on the aquatic environment when conducted in accordance with the permit conditions (*Federal Register*, January 15, 2002, Vol. 67, No. 10). Based on the information you provided to us, NWP 14, Linear Transportation Projects, authorizes your proposal to fill 0.127 acres of waters of the United States (U.S.) to widen State Route (SR) 16, adding high occupancy vehicle (HOV) lanes between Union Avenue and Jackson Avenue, as depicted on the enclosed drawings dated March 30, 2004. The proposed project would occur in wetlands of the Leach Creek basin at the City of Tacoma, in Pierce County, Washington.

In order for this NWP authorization to be valid, you must ensure that the work is performed in accordance with the enclosed *Nationwide Permit 14, Terms and Conditions* and the following special conditions that the District Engineer (DE) has added to ensure that this project would have no more than a minimal adverse impact on the aquatic environment:

a. The wetland area enhanced and preserved as compensatory mitigation for work authorized by this permit, shall not be made the subject of a future individual or general Department of the Army permit application for fill or other development, except for the purposes of enhancing or restoring the mitigation associated with this project. In addition, a description of the mitigation area identified in the final mitigation plan as approved, and any subsequent permit mitigation area revisions, will be recorded with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records to or interest in real property. Proof of this recorded documentation must be provided to the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch within 60 days from the date of permit issuance.

b. A status report on the mitigation construction, including as-built drawings, must be submitted to the Corps, Seattle District, Regulatory Branch, 13 months from the date of permit

issuance. Annual status reports on mitigation construction are required until mitigation construction is complete.

c. The permittee shall implement and abide by the mitigation plan titled "Wetland Mitigation Plan, SR 16 Union Avenue to Jackson Avenue HOV" dated April 2004. Mitigation monitoring reports will be due annually for years 1, 2, 3, 5, 7, and 10 for forested systems from the due date of the as-built drawings of the mitigation site. All reports must be submitted to the Corps, Seattle District, Regulatory Branch and must prominently display the reference number 200301129.

d. Construction of a stormwater treatment facility as described in the mitigation plan titled "Wetland Mitigation Plan, SR 16 Union Avenue to Jackson Avenue HOV" dated April 2004, must be completed prior to completion of the proposed HOV project. Proof of completion must be submitted to the Corps, Seattle District, Regulatory Branch by May 5, 2007.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form to the address indicated on the form. Your signature on this form is our assurance that the completed work and any required mitigation was conducted in accordance with the terms and conditions of this NWP, including any special conditions required by the DE. Completing and returning the compliance certification form is a requirement of every NWP authorization (see NWP National General Condition 14).

In order for this NWP authorization to be valid, the State of Washington (State) must have issued or waived Section 401 Water Quality Certification (WQC) and, for Washington's 15 coastal counties, concurred with or waived a Coastal Zone Management (CZM) consistency determination. We are unable to determine whether or not your project requires an individual WQC and/or CZM consistency determination response. Before you can proceed with the work authorized by this NWP, you must contact the following Washington State Department of Ecology office for the State's determination:

Nationwide Permit Coordinator
Department of Ecology
SEA Program
Post Office Box 47600
Olympia, Washington 98504-7600
Telephone (360) 407-6926

If more than 180 days pass without the State responding to your concurrence requests, your requirement to obtain an individual WQC and/or CZM consistency determination response becomes waived. You may then proceed to construction.

We have reviewed your project pursuant to the requirements of the Endangered Species Act (ESA). We have determined that this project will not affect any species listed as threatened or endangered under the ESA (or a species proposed for such designation). As such, this project satisfies the requirements of NWP National General Condition 11. We have also reviewed your project pursuant to the requirements of the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 in regards to Essential Fish Habitat (EFH). We have determined that the proposed action will not adversely affect EFH for federally managed fisheries in Washington.

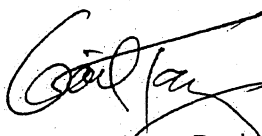
Our verification of this NWP authorization is valid for 2 years from the date of this letter unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date, please contact us to discuss the status of your authorization. This verification includes a preliminary jurisdictional determination that is not appealable.

If this project complies with all terms and conditions of this authorization, you will need no further authorization from us for the above-described work. However, this authorization does not obviate your responsibility to obtain all additional authorizations, including State and local permits that are applicable to your project. Also, we remind you that failure to comply with all terms and conditions of this NWP authorization, including any above-listed special conditions invalidates your authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899.

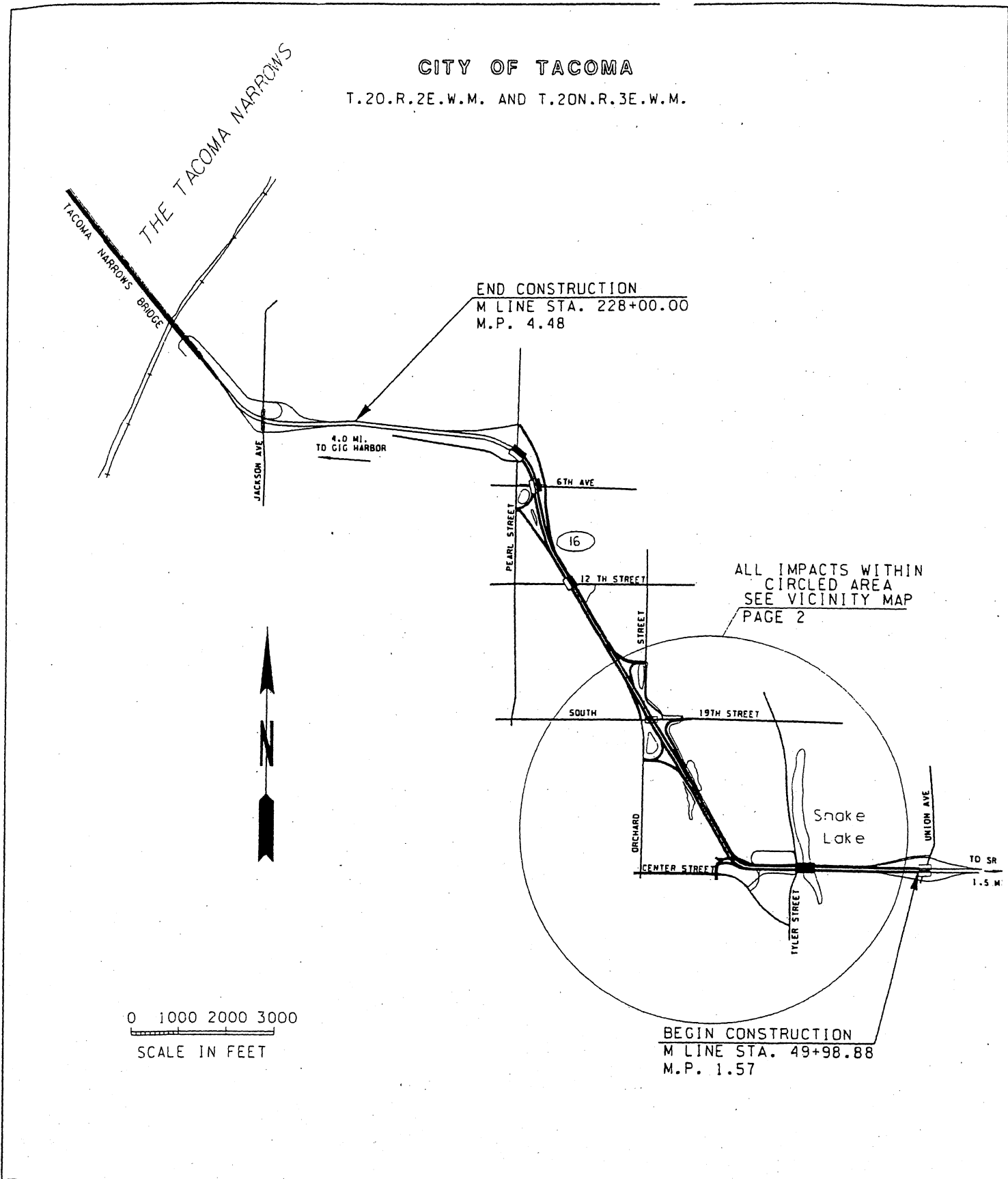
Thank you for your cooperation during the permit process. Your efforts help us protect our nation's aquatic resources, including wetlands. Please remember to fill out and return the compliance certification form as soon as you complete the authorized work. We are interested in your thoughts and opinions concerning your experience with the Corps, Seattle District's Regulatory Program. Please complete a Customer Service Survey form. The form is available on our website at: <http://per2.nwp.usace.army.mil/survey.html>. At your request, we will mail you a paper copy that you may complete and return to us by mail or fax.

If you have any questions about this letter or our regulatory program, please contact me at telephone (206) 764-6912 or e-mail Kathryn.J.Stenberg@nws02.usace.army.mil.

Sincerely,


for Kate Stenberg, Project Manager
South Application Review Section

Enclosures




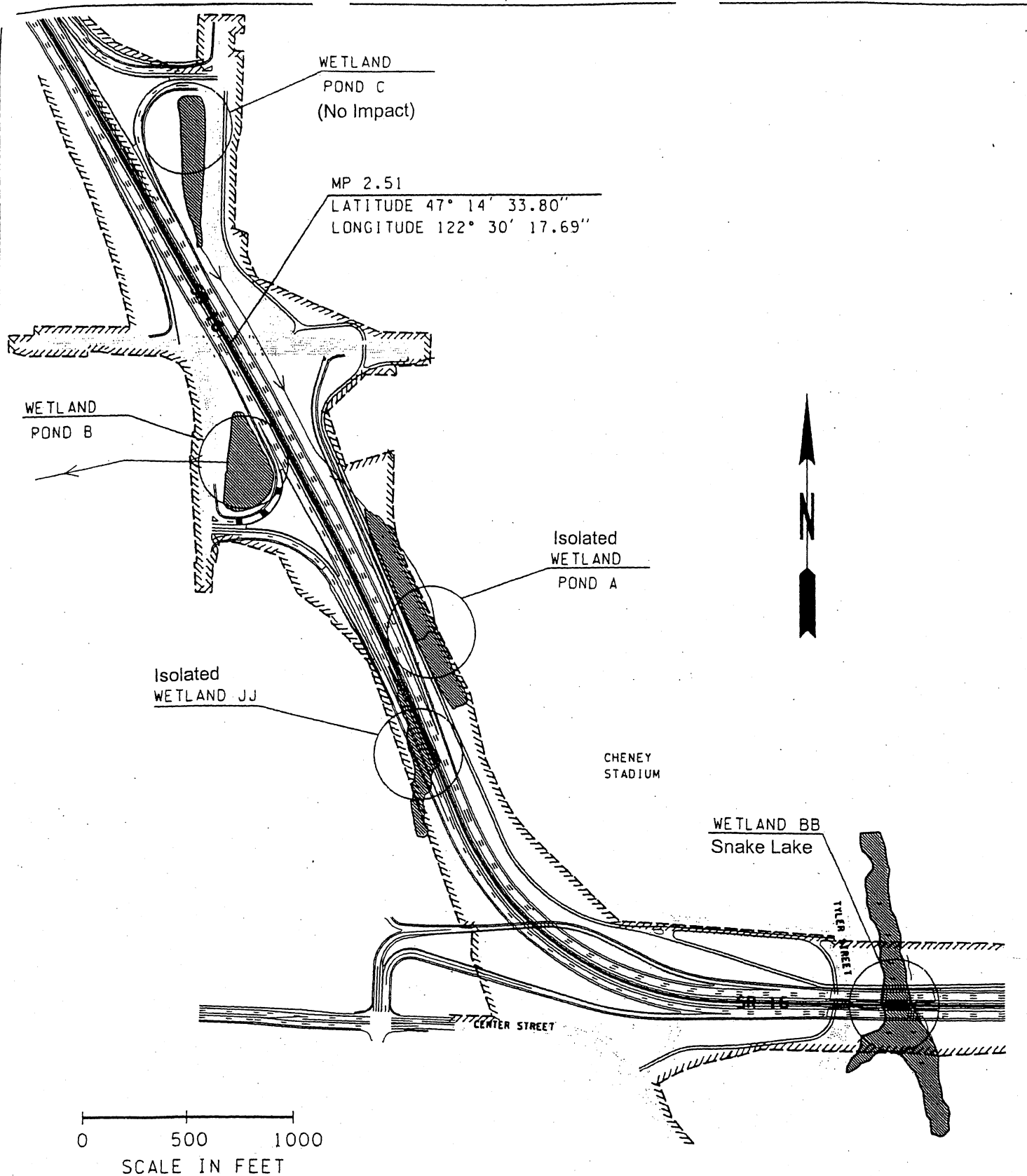
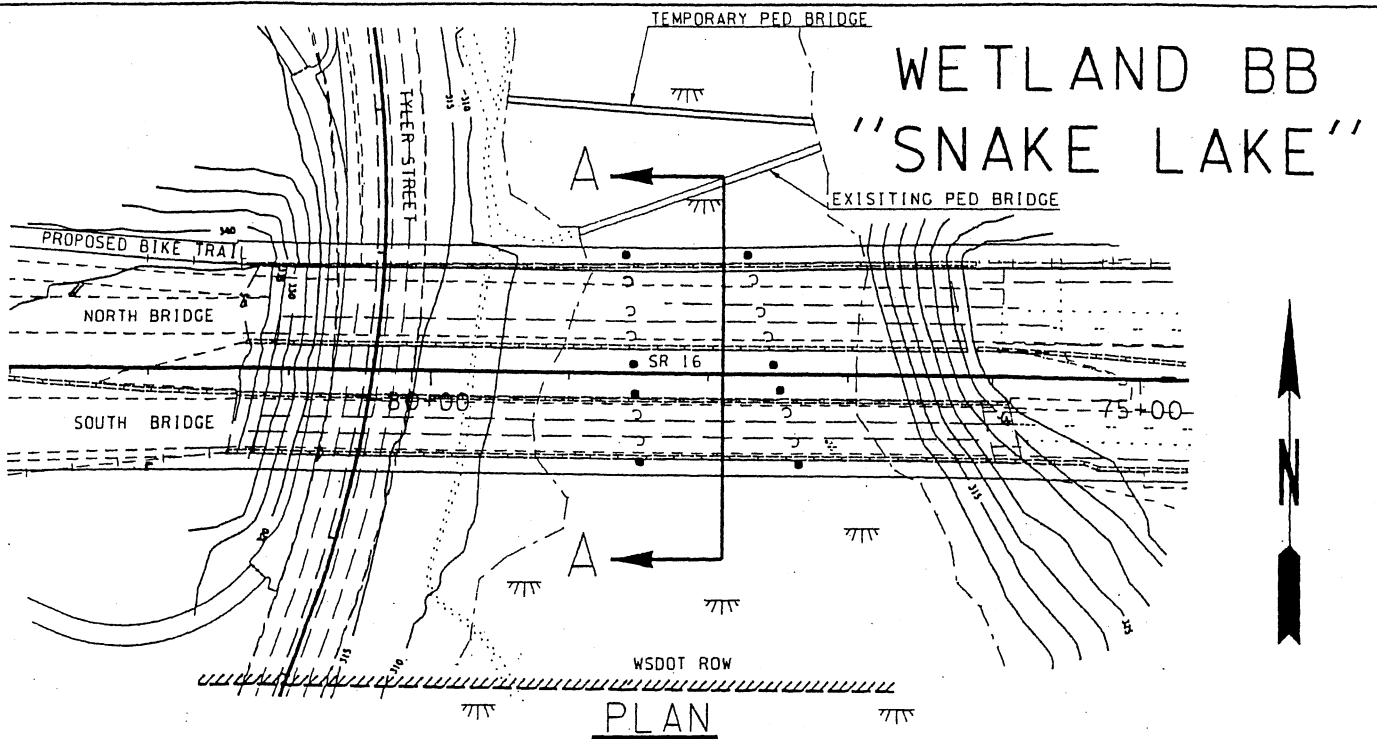
PURPOSE: SR 16 UNION TO JACKSON	REFERENCE: 200301129	 Washington State Department of Transportation
PROPOSED: WIDENING FOR HOV	APPLICANT: WSDOT	
LOCATION: SR16 TACOMA	COUNTY: PIERCE COUNTY, WA	
DATUM: NAVD 1988	NEAR:	
ADJACENT PROPERTY OWNERS:	WATER BODY: Wetlands, Leach Creek Basin	
Sheet 1 of 5	DATE: March 30, 2004	

Figure 1. Project vicinity map

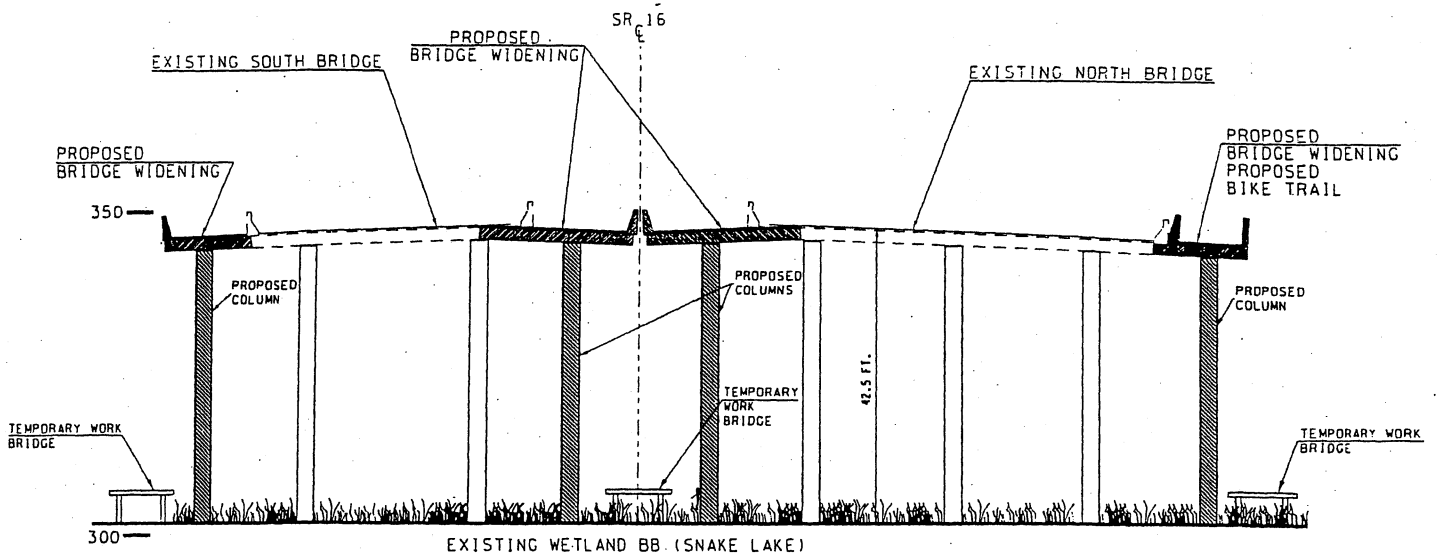


PURPOSE: SR 16 UNION TO JACKSON	REFERENCE: 200301129
PROPOSED: WIDENING FOR HOV	APPLICANT: WSDOT
LOCATION: SR16 TACOMA	COUNTY: PIERCE COUNTY, WA
DATUM: NAVD 1988	NEAR:
ADJACENT PROPERTY OWNERS:	WATER BODY: Wetlands
Sheet 2 of 5	DATE: March 30, 2004

Figure 2. Wetlands associated with the project



TOTAL WETLAND AREA = 17 ACRES
 PERMANENT BRIDGE IMPACT (PIER FOOTPRINTS) = 0.007 ACRES
 PERMANENT BRIDGE SHADING IMPACTS = 0.49 ACRES



PURPOSE: SR 16 UNION TO JACKSON

PROPOSED: WIDENING FOR HOV

LOCATION: SR16 TACOMA

DATUM: NAVD 1988

ADJACENT PROPERTY OWNERS:

REFERENCE: 200301129

APPLICANT: WSDOT

COUNTY: PIERCE COUNTY, WA

NEAR:

WATER BODY: Wetlands

Sheet 3 of 5

DATE: March 30, 2004



Washington State
Department of Transportation

APPENDIX H

Section 401 Water Quality Certification



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
TTY 711 or 800-833-6388 (For the Speech or Hearing Impaired)

November 19, 2004

Jeff Sawyer
Department of Transportation
Olympic Region
P.O. Box 47417
Olympia, WA 98504-7417

RE: Water Quality Certification
Public Notice No. OBY-4-012713
Leech Creek Wetland Fill
2nd Revision

Dear Mr. Sawyer,

We have received Department of Transportation's (WSDOT) request for a modification to Department of Ecology (Ecology) Clean Water Act Section 401 Certification (Water Quality Certification), Public Notice No. OBY-4-012713 issued on February 2, 1990. Under this modification request, WSDOT is proposing to re-locate existing wetland mitigation on SR 16 to an off-site location, away from the highway right-of-way. The original wetland mitigation consisted of construction of three combination wetland/stormwater ponds. These mitigation sites will remain as stormwater ponds and continue to provide stormwater functions.

The original revision of Water Quality Certification, Public Notice No OBY-4-012713, dated May 10, 2004, was appealed July 23, 2004. The appeal was settled on October 25, 2004. In light of that settlement, the Water Quality Certification has been revised a second time.

We have reviewed the proposed wetland mitigation relocation plan and approve subject to the following revised condition:

Condition 2. is replaced with the following:

Project mitigation shall be constructed and maintained as described in SR 16 Union Avenue to Jackson Avenue HOV Wetland Mitigation Plan for Department of Ecology October 2004, approved by Penny Kelley, Ecology on November 10, 2004.

All other terms and conditions contained in the original Water Quality Certification remain in effect. If you have any questions, please contact Penny Kelley, WSDOT Liaison, at 360-407-7298 or by e-mail at pkel461@ecy.wa.gov

Sincerely,

Brenden McFarland, Section Manager
Environmental Review & Transportation Section
Shorelands & Environmental Assistance Program

Cc: Corps of Engineers – Kate Stenberg
WSDFW – Travis Nelson
City of Tacoma – Dale Yeager

Ecology Southwest Region – Margaret Hill
City of University Place – David Swindale



APPENDIX I

Coastal Zone Management Consistency Certification



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
TTY 711 or 800-833-6388 (For the Speech or Hearing Impaired)

REGISTERED MAIL
RB 252 881 005 US

November 19, 2004

Jeff Sawyer
Department of Transportation
Olympic Region
P.O. Box 47440
Olympia, WA 98504-7440

RE: Amended Water Quality Certification, Order 1173, for Nationwide Permit (NWP) 14 and Coastal Zone Management (CZM) Consistency Response for Corps Permit 200301129 for placement of fill in 0.007 acres of Snake Lake to widen the bridge and 0.12 acres of wetlands to add HOV lanes on SR 16.

Dear Mr. Sawyer:

The permit from the U.S. Army Corps of Engineers for proposed work in or near Snake Lake, Pierce County has been reviewed. On behalf of the State of Washington, we certify that the work proposed in the application for Department of Army permit, complies with applicable provisions of Sections 301, 302, 303, 306 and 307 of the Clean Water Act, as amended, and other appropriate requirements of State law. This letter also serves as the State response to the Corps of Engineers.

This was certified on May 10, 2004 pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurred with the applicant's determination that this work is consistent with the approved Washington State Coastal Zone Management Program. This concurrence is based upon the applicant's compliance with all applicable enforceable policies of the Coastal Zone Management Program, including Section 401 of the Federal Water Pollution Control Act. This certification concurrence is subject to the conditions contained in the enclosed Order.

The Department of Ecology originally issued a Water Quality Certification and Administrative Order (Order) #1173 to the State of Washington, Department of Transportation for this project on May 10, 2004. The Order was appealed on July 23, 2004. The appeal was settled October 25, 2004. In light of that settlement, the Order has been amended. Changes to the original Order are highlighted in the document.



Department of Transportation
Page 2
November 19, 2004

If you have any questions, please contact Penny Kelley at (360) 407-7298. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,



Brenden McFarland, Section Manager
Environmental Review & Transportation Section
Shorelands and Environmental Assistance Program

BM:pk
Enclosure

cc: Corps of Engineers – Kate Stenberg
Ecology, SWRO – Perry Lund
Ecology, SWRO – Margaret Hill
Ecology, SEA HQ – Yvonne Oliva
WSDFW – Travis Nelson
City of University Place –David Swindale
City of Tacoma—Dale Yeager

**IN THE MATTER OF GRANTING A
WATER QUALITY CERTIFICATION TO**

Washington Department of Transportation
in accordance with 33 U.S.C. 1341
FWPCA § 401, RCW 90.48.260
and WAC 173-201A

)
) **Docket Number 1173**

) **1st Amendment**

) Widen & construct HOV lanes
) and widen the bridge over
) Snake Lake on SR 16

TO: Jeff Sawyer
Department of Transportation
Olympic Region
P.O. Box 47417
Olympia, WA 98504-7417

On December 16, 2003, Washington Department of Transportation submitted a request for water quality certification from the State of Washington for the above referenced project pursuant to the provisions of 33 U.S.C. 1341 (FWPCA§ 401). The request for certification was made available for public review and comment through the Department of Ecology's Public Notice dated January 16, 2004.

The Department of Ecology originally issued a Water Quality Certification and Administrative Order (Order) #1173 to the State of Washington, Department of Transportation for this project on May 10, 2004. The Order was appealed on July 23, 2004. The appeal was settled October 25, 2004. In light of that settlement, the Order has been amended.

The proposed project entails widening the bridge over Snake Lake and constructing HOV lanes between MP 0.85 to MP4.48. The construction of HOV lanes will also entail establishment of standard shoulders, auxiliary lanes and improved on/off ramps. The SR 16 Union Avenue to Jackson Avenue HOV project site is located in Township 20 North, Range 2 East, Pierce County. The proposed work will impact 0.007 acres at Snake Lake and 0.12 acres of wetlands. Mitigation for the proposed wetland impacts will be construction of a stormwater facility at Snake Lake for treatment of stormwater, and a portion of the enhancement and preservation of 26.80 acres of wetlands, and enhancement and preservation of 4.67 acres of wetland buffer at the Leach Creek Site

For purposes of this Order and Water Quality Certification, the term "Applicant" shall mean the Washington State Department of Transportation (WSDOT) and it's agents, assigns, and contractors.

AUTHORITIES:

In exercising authority under 33 U.S.C. 1341 and RCW 90.48.260, Ecology has investigated this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. Sections 1311, 1312, 1313, 1316, and 1317 (FWPCA Sections 301, 302, 303, 306, and 307);
2. Conformance with the state water quality standards as provided for in Chapter 173-201A WAC authorized by 33 U.S.C. 1313 and by Chapter 90.48 RCW, and with other appropriate requirements of state law; and,
3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

WATER QUALITY CERTIFICATION CONDITIONS:

A. Timing:

1. This Order is valid until all compliance requirements in this document have been met.

B. Notification Conditions:

1. Notification shall be made to Ecology's Federal Permit Manager (Penny Kelley at 360/ 407-7298 or Email pkel461@ecy.wa.gov or mail P.O. Box 47600, Olympia, WA 98504-7600) for the following activities:
 - at least 7 days prior to the pre-construction meeting,
 - at least 10 days prior to the onset of any work on site,
 - at least 10 days prior to starting work on widening the bridge over Snake Lake
 - immediately for any work that is out of compliance with the provisions of this Order
 - immediately if monitoring on Snake Lake indicates an exceedance of water quality standards
 - at least 7 days prior to WSDOT starting construction of the stormwater treatment facility at the Leach Creek Mitigation Site.

NOTE: These notifications shall include the applicant's name, project name, project location, the number of this Order, contact and contact's phone number.

2. The Applicant shall ensure that all appropriate Project Engineers and the Contractors at the project site and/or mitigation sites have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide to Ecology a signed statement from each Project Engineer and Contractor that they have read and understand the conditions of this Order and the above-referenced permits, plans, documents and approvals. These statements shall be provided to Ecology no less than 7 days before construction begins at the project or mitigation sites.
3. Within 10 days of completing site construction, the applicant shall provide a signed statement by the Project Engineer that the site is stable for erosion control.

C. Construction Conditions: Stormwater & Water Quality Protection

1. The project shall be constructed in compliance with the NPDES 402 permit for construction stormwater.
2. The project shall be clearly marked/staked prior to construction. Clearing limits, travel corridors and stockpile sites shall be clearly marked.

3. Work in or near waters of the state shall be done so as to minimize turbidity, erosion, and other water quality impacts. Construction stormwater, sediment, and erosion control best management practices suitable to prevent exceedances of state water quality standards shall be in place before starting clearing, filling and grading work and shall be maintained throughout construction.
4. Prior to clearing and grading in wetlands, the adjacent wetlands shall be protected from construction impacts. Wetland areas to be protected from disturbance shall be delineated so as to be clearly visible to equipment operators. Equipment shall not be moved into or operated in wetlands that are not authorized to be filled and shall operate only within the delineated clearing limits, corridors and stockpile areas.
5. Periodic inspection and maintenance of all erosion control structures shall be conducted no less than every 7 days from the start of the project to site stabilization. Additional inspections shall be conducted prior to after expected rainfall events to ensure erosion control measures are in working conditions. Any damaged structures shall be immediately repaired. If it is determined at the inspection that additional measures are needed to control stormwater and erosion, they shall be implemented immediately.
6. All debris or deleterious material resulting from construction shall be properly contained and disposed of so that it cannot enter waters of the state.
7. The applicant shall implement all specifications for erosion and sediment control specified in the SWPPP, TESC and all contract documents. Adjustments to planned erosion and sediment control may be necessary to successfully control off-site movement of materials.
8. A contingency plan shall be developed detailing actions to be made in the event of adverse weather conditions.
9. Turbid water generated from construction activities, including turbid dewatering water, shall not be discharge directly to waters of the state. Clean de-watering water that has been tested & confirmed to meet water quality standards may be discharged directly to waters of the state. The discharge outfall method shall be designed and operated so as not to cause erosion or scour in state waters, banks or vegetation.
10. Machinery and equipment used during construction shall be serviced, fueled, and maintained on uplands in a confined area in order to prevent contamination to waters of the state. Fueling areas will be provided with adequate spill containment.
11. Staging areas will be located a minimum of 50 feet, and where practicable 200 feet, from waters of the state including wetlands.

12. Equipment used for in-water work shall be free of external petroleum-based products while working around waters of the state and shall be checked daily for leaks. Any necessary repairs shall be completed prior to commencing work activities.
13. Wash water containing sediments, oils, grease, or other hazardous materials resulting from wash down of equipment or working areas shall not be discharged into state waters. The applicant shall setup a designated area for washing down equipment with no possible discharge to waters of the state including wetlands.

Bridge Widening

14. All construction debris resulting from widening the bridge on SR 16 over Snake Lake shall be properly disposed of to prohibit its entrance into waters of the state. Incidental debris shall be removed from Snake Lake.
15. If saw cutting of concrete is needed for purposes of widening the bridge, containment methods are required to control and contain all saw-cut water and debris. The saw-cut water shall be disposed of upland with no possibility of entry to Snake Lake or waters of the state. All debris shall be properly disposed of to prohibit its entrance into waters of the state.
16. Fresh concrete or concrete by-products will not be allowed to enter Snake Lake at any time during the project. All forms used for concrete shall be completely sealed to prevent the possibility of fresh concrete entering into Snake Lake.
17. When possible, all concrete shall be poured during dry weather and in a dry de-watered site. If this is not possible, the concrete contact water shall not enter waters of the state or the adjacent bank of Snake Lake. All concrete shall be completely cured prior to coming in contact with water. Any contact water discharged from a confined area with curing concrete shall be discharged to upland areas to be treated and infiltrated, or disposed of appropriately with no possible entry to Snake Lake or state waters.
18. A separate area shall be set aside, which does not have any possibility of draining to surface waters and wetlands, for the wash out of concrete delivery trucks, pumping equipment, and tools.
19. Any wooden components used for the construction of temporary work platforms or a temporary pedestrian bridge, if composed of pressure treated wood, shall comply with all current best management practices as contained in the "Western Wood Preservers Institute's" latest edition of Best management Practices for Use of Treated Wood in Aquatic Environments."
20. Measures shall be used to minimize disturbance of vegetation when constructing the temporary work platforms and temporary pedestrian bridge.

D. Wetland Mitigation Requirements:

1. Project mitigation shall be constructed and maintained as described in SR 16 Union Avenue to Jackson Avenue HOV Wetland Mitigation Plan for Department of Ecology October 2004, approved by Penny Kelley, Ecology on November 10, 2004.
2. Any changes to the mitigation plan must be approved in writing by Ecology.
3. "As-Built" Report: an as-built report documenting the final design of the mitigation site shall be prepared when the mitigation site is completed. The report shall include the following:
 - An updated delineation & survey of the boundaries of the wetland within the mitigation site;
 - photographs of the area taken from established permanent reference points;
 - a planting plan showing species, densities, sizes, and approximate locations of plants, as well as plant sources and the time of planting;
 - drawings in the report shall clearly identify the boundaries of the project;
 - locations of sampling and monitoring sites; and
 - any changes to the plan that occurred during construction

The "As Built" report shall be sent to Ecology's Federal Permit Manager (Penny Kelley) within sixty days of completing project construction and mitigation.

4. Deed Restriction: Permanent protection of the wetland mitigation and preservation areas and buffers shall be recorded on the property deed. The deed shall clearly indicate that the wetland mitigation and preservation mitigation areas are "waters of the state". Documentation that this requirement has been fulfilled shall be provided to Ecology's Federal Permit Manager (Penny Kelley) as part of the "as-built" report.
5. Monitoring and Contingency Plan: Monitoring shall be done as described SR 16 Union Avenue to Jackson Avenue Wetland Mitigation Plan For Department of Ecology October 2004:
 - a) A written report describing the monitoring results will be submitted to the Department of Ecology the first, third, fifth, seventh and tenth years after completion of the mitigation installation. As stated in the wetland mitigation plan, the mitigation site will be monitored a final time at the end of year 15. Plant cover will be surveyed and a general review of the progression of the site will be conducted. This will be written up as a formal monitoring report and submitted to Ecology for review.

- b) Performance Standards: Mitigation efforts shall be monitored for compliance with the performance standards referenced on page 25 of the Mitigation Plan Report, and as shown on the Mitigation Plan drawing. If the results of monitoring show that the Mitigation Area does not satisfy the performance standards set forth in the Mitigation Plan, additional monitoring and mitigation may be required (e.g., replanting, soil amendments, selection of alternative species, revaluation of the Standard of Success, etc.). Any additional monitoring or mitigation measures are subject to review and approval by Ecology.
 - c) The wetland mitigation planting plan shall be field supervised and inspected by Department of Transportation wetland biologist or another qualified consultant(s) during grading and planting operations, as well as after planting has been completed, to ensure proper installation.
6. WSDOT shall submit a design proposal for the stormwater treatment facility at the Leach Creek Mitigation site for review by Ecology. The proposal shall include plan sheets showing details of the proposed design and shall include the basis for the pond design.

E. Emergency/Contingency Measures:

1. The applicant shall develop a spill prevention and containment plan for this project, and shall have spill cleanup materials and an emergency call list available on site.
2. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited. If these occur, the applicant shall comply with IL 4055.00 Environmental Compliance Assurance Procedure for Construction Projects and Activities effective March 10, 2003 and immediately take the following actions:
 - a) Cease operations
 - b) Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
 - c) In the event of finding distressed or dying fish, the applicant shall collect fish specimens and water samples in the affected area and, within the first hour of the event. These samples shall be held in refrigeration or on ice until the applicant is instructed by Ecology on what to do with them. Ecology may require analyses of these samples before allowing the work to resume.
 - d) In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.

- e) Immediately notify Ecology's Southwest Regional Spill Response Office at 360-407-6300 and Department of Fish and Wildlife of the nature of the problem, any actions taken to correct the problem, and any proposed changes in operations to prevent further problems.
- 3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
- 4. If at any time during work the proponent finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the proponent shall immediately notify the Ecology's Southwest Regional Spill Response Office at 360-407-6300.

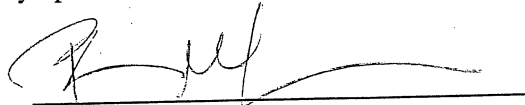
F. General Conditions:

- 1. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.
- 2. This Order does not exempt and is conditioned upon compliance with other statutes and codes administered by federal, state, and local agencies.
- 3. Ecology retains continuing jurisdiction to make modifications hereto through supplemental Order, if it appears necessary to further protect the public interest.
- 4. The Applicant shall construct and operate the project in a manner consistent with the project description contained in the Public Notice for certification, or as otherwise approved by Ecology.
- 5. The Applicant shall reapply with an updated application if the information contained in the Public Notice is voided by subsequent submittals to the federal agency. Any future action at this project location, emergency or otherwise, that is not defined in the public notice, or has not been approved by Ecology, is not authorized by this Order. All future actions shall be coordinated with Ecology for approval prior to implementation of such action.
- 6. A WSDOT representative shall be on-site, or on-call and readily accessible to the site, at all times while construction activities are occurring that may affect the quality of ground and surface waters of the state, including all periods of construction activities.
- 7. The WSDOT representative shall have adequate authority to ensure proper implementation of the Erosion and Sediment Control Plan, as well as immediate corrective actions necessary because of changing field conditions. If the WSDOT representative issues a directive necessary to implement a portion of the Pollution Control Plan or to prevent pollution to the river, all personnel on site, including the construction contractor and the contractor's employees, shall immediately comply with this directive.

8. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology or WDFW personnel for site inspections, monitoring, necessary data collection, or to ensure that conditions of this Order are being met.
9. Copies of this Order and all related permits, approvals, and documents shall be kept on the project site and readily available for reference by the project managers, construction managers and foremen, other employees and contractors of the Applicant, and state agency personnel.
10. Any person who fails to comply with any provision of this Order shall be liable for a penalty of up to ten thousand dollars (\$10,000) per violation for each day of continuing noncompliance.

Any person aggrieved by Order #1173 may obtain review thereof by appeal. Pursuant to ch. 43.21B RCW, a person can appeal this order to the Pollution Control Hearings Board within 30 days of the date of receipt of this Order. Any such appeal must be sent to the Washington Pollution Control Hearings Board, PO Box 40903, Olympia, WA 98504-0903. Concurrently, a copy of the appeal must be sent to the Department of Ecology, Shorelands and Environmental Assistance Program, Attn: Loree' Randall, PO Box 47600, Olympia, WA 98504-7600. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

Dated Nov 19, 2004 at Olympia, Washington



Brenden McFarland, Section Manager
Environmental Review & Transportation Section
Shorelands and Environmental Assistance Program

APPENDIX J

Critical Area Ordinance Permit

(Will Be Provided by Addendum)

APPENDIX K

Disputes Review Board

(January 5, 2004)

Appendix to the Special Provisions Disputes Review Board

Scope of Work

The Scope of Work of a Board includes, but is not limited to, the following items of work:

Board Consideration of Disputes or Claims: Upon request by either the State or the Contractor to review a dispute, the Board shall convene to review and consider the issue. Both the State and the Contractor shall be given the opportunity to present their evidence at these meetings. The time and location of Board meetings shall be determined by the State, Contractor, and Board. It is expressly understood that the Board members are to act impartially and independently in the consideration of facts and conditions surrounding any written appeal presented by the State or the Contractor and that the recommendations concerning any such appeal are advisory.

Procedures: Prior to any hearing involving a contract dispute, the Board will meet with the State and the Contractor to establish the rules and procedures that will govern the Board's participation in the Project as set forth in the Special Provisions of the construction contract. In establishing the rules and procedures, the parties may consider the Suggested Administrative Procedures included in this Appendix. The Board may establish any internal rules and procedures not covered in the Agreement with the State and the Contractor. The Board's recommendations resulting from its consideration of a dispute shall be furnished in writing to the State and the Contractor. The recommendations shall be based on the construction contract provisions and the facts and circumstances involved in the dispute.

Furnishing Documents: The State shall furnish to the Board three copies of the contract and other documents, which are or may become pertinent to the activities of the Board. The Contractor shall furnish to the Board three sets of documents, which are or may become pertinent to the activities of the Board, except documents furnished by State.

Construction Site Visits: The Board members shall visit the project site to keep abreast of construction activities and to develop a familiarity of the work in progress. The frequency, exact time, and duration of these visits shall be as mutually agreed between the State, the Contractor, and the Board.

Suggested Administrative Procedures

Objective

The principal objective of the Board is to assist in the resolution of disputes, which would otherwise be likely submitted to litigation processes. If this objective is achieved, such disputes can be resolved promptly, with minimum expense, and with minimum disruption to the administration and performance of the work. It is not intended for the State or the Contractor to default on their normal responsibility to amicably and fairly settle their differences by indiscriminately assigning them to the Board. It is intended that the mere existence of the Board will encourage the State and the Contractor to resolve potential disputes without resorting to this appeal procedure. But when a

dispute which is serious enough to warrant the Board's review does develop, the machinery for prompt and efficient action will already be in place.

Responsibility of the Board

Render findings and recommendations on disputes between the Contractor and the State arising from the construction contract. Primarily, the Board will consider claims and disputes involving interpretation of the Plans and Specifications, delays, acceleration of the work, scheduling, classification of extra work, changed conditions, design changes, and the like. During its regular visits to the job site, the Board will encourage the settlement of differences at the job level.

The Board will refrain from officially giving any advice or consultative services to either party. The individual members will act in a completely independent manner and will have no consultative or business connections with either party.

During routine meetings of the Board as well as during formal hearings, Board members should refrain from expressing opinions on the merits of statements on matters under dispute or potential dispute. Opinions of Board members expressed in private sessions should be kept strictly confidential.

Normally, the Board member selected by the first two will act as Chairman for all activities. However, this post may be delegated to another member from time-to-time.

Regular Construction Progress Meetings

All regular meetings will be held at or near the job site. The frequency of regular meetings will be set by agreement of the Board, the Contracting Agency and the Contractor, consistent with the construction activities and the matters under consideration and dispute. Each meeting will consist of a round table discussion and a field inspection of the work being performed on that contract. The round table discussion will be conducted by a member of the State's staff and will be attended by selected personnel from the State and the Contractor. The agenda will generally be as follows:

- Meeting opened by Chairman of the Board.
- Remarks by the State's representative.
- A description by the Contractor of work accomplished since the last meeting, the current status of the work, schedule-wise, and a forecast for the coming period.
- An outline, by the Contractor, of potential problems and a description.
- An outline, by the State's Project Engineer, of the status of the work as the Project Engineer views it.
- A brief description, by the Contractor or the State, of potential claims or disputes, which have surfaced since the last meeting.
- A summary, by the Contractor, the State or the Board, of the status of past disputes and claims.

The State will prepare minutes of all regular meetings and circulate them for revision and approval by all concerned.

The field inspection will cover all active segments of the work, the Board being accompanied by both State and Contractor personnel.

Handling of Written Appeals

When the Board receives a written appeal, it shall first reach agreement with the parties on a time to conduct the hearings. The decision shall be tempered by the desires and needs of the State and the Contractor. If the matter is not urgent, it may be scheduled for the time of the next regular visitation to the project. For an urgent matter, the Board should meet at its earliest convenience.

The Board may also request that written documentation concerning the dispute be sent to each individual member for study before the hearing begins. A party furnishing any written documentation to the Board must furnish copies of such information to the other party before the hearing begins.

Normally, the hearings would be conducted at the job site. However, any location, which would be more convenient and still provide all required facilities and access to the necessary documentation, would be satisfactory. Private sessions of the Board may also be held at a location other than the job site.

For hearing on disputes, the third member or one of the other members designated by the third member of the Board will act as Chairman. The State and the Contractor shall have a representative at all hearings. The claimant will discuss the dispute followed by the other party. Each party will then be allowed one or more rebuttals until all aspects are thoroughly covered. Each time a person testifies, the Board members may ask questions, seek clarification, or request further data. The Board may request from either party documents or information that would assist the Board in making its findings and recommendations, including, but not limited to, documents used by the Contractor in preparing the bid for this project. A refusal by a party to provide information requested by the Board may be considered by the Board in making its findings and recommendations. In large or complex issues, one or more additional hearings may be necessary in order to consider all the evidence presented by both parties.

During open hearings, no Board member should express an opinion concerning the merit of any facet of the dispute. By the same token, all Board deliberations should be conducted in private, with all interim individual views kept strictly confidential.

After the hearings are concluded, the Board shall meet in private and reach a conclusion supported by two or more members. Its findings and recommendations, together with its reasons shall then be submitted as a written report to both parties. The recommendations shall be based on the pertinent contract provisions and facts and circumstances involved in the dispute.

The Board should make every effort to reach a unanimous decision. If this proves impossible, the dissenting member may prepare a minority report.

Although both parties should place weight upon the Board's recommendations, they are not binding. Either party may appeal a recommendation to the Board for reconsideration. However, if the Board's recommendations do not resolve the dispute, all records, and written recommendations, including any minority reports, may be admissible as evidence in any subsequent litigation.

Miscellaneous

It is not desirable to adopt hard and fast rules for the functioning of the Board. The entire procedure should be kept flexible so that it can adapt to changing situations. The Board should initiate, with the other parties' concurrence, new rules or modifications to old ones whenever this is deemed necessary.

State of Washington
DEPARTMENT OF LABOR AND INDUSTRIES
 Prevailing Wage Section - Telephone (360) 902-5335
 PO Box 44540, Olympia, WA 98504-4540

Washington State Prevailing Wage Rates For Public Works Contracts

The PREVAILING WAGES listed here include both the hourly wage rate and the hourly rate of fringe benefits.
 On public works projects, workers' wage and benefit rates must add to not less than this total. A brief description of overtime calculation requirements is provided on the Benefit Code Key.

PIERCE COUNTY

Effective 09-01-04

<u>Classification</u>	<u>PREVAILING WAGE</u>	(See Benefit Code Key)		
		Over Time <u>Code</u>	Holiday <u>Code</u>	Note <u>Code</u>
ASBESTOS ABATEMENT WORKERS				
JOURNEY LEVEL	\$32.61	1N	5D	
BOILERMAKERS				
JOURNEY LEVEL	\$43.47	1B	5N	
BRICK AND MARBLE MASONS				
JOURNEY LEVEL	\$39.87	1M	5A	
CABINET MAKERS (IN SHOP)				
JOURNEY LEVEL	\$24.76	1		
CARPENTERS				
ACOUSTICAL WORKER	\$39.11	1M	5D	
BRIDGE, DOCK AND WARF CARPENTERS	\$38.95	1M	5D	
CARPENTER	\$38.95	1M	5D	
CREOSOTED MATERIAL	\$39.05	1M	5D	
DRYWALL APPLICATOR	\$39.63	1M	5D	
FLOOR FINISHER	\$39.08	1M	5D	
FLOOR LAYER	\$39.08	1M	5D	
FLOOR SANDER	\$39.08	1M	5D	
MILLWRIGHT AND MACHINE ERECTORS	\$39.95	1M	5D	
PILEDRIERS, DRIVING, PULLING, PLACING COLLARS AND WELDING	\$39.15	1M	5D	
SAWFILER	\$39.08	1M	5D	
SHINGLER	\$39.08	1M	5D	
STATIONARY POWER SAW OPERATOR	\$39.08	1M	5D	
STATIONARY WOODWORKING TOOLS	\$39.08	1M	5D	
CEMENT MASONS				
JOURNEY LEVEL	\$42.01	1M	5D	
DIVERS & TENDERS				
DIVER	\$80.62	1M	5D	8A
DIVER TENDER	\$41.72	1M	5D	
DREDGE WORKERS				
ASSISTANT ENGINEER	\$39.52	1B	5D	8L
ASSISTANT MATE (DECKHAND)	\$38.76	1B	5D	8L
BOATMEN	\$39.52	1B	5D	8L
ENGINEER WELDER	\$39.57	1B	5D	8L
LEVERMAN, HYDRAULIC	\$41.04	1B	5D	8L
MAINTENANCE	\$38.76	1B	5D	8L
MATES	\$39.52	1B	5D	8L
OILER	\$39.16	1B	5D	8L
DRYWALL TAPERS				
JOURNEY LEVEL	\$39.44	1J	5B	
ELECTRICIANS - INSIDE				
CABLE SPLICER	\$46.07	1G	5C	
JOURNEY LEVEL	\$42.98	1G	5C	
LEAD COVERED CABLE SPLICER	\$49.16	1G	5C	
WELDER	\$46.07	1G	5C	
ELECTRICIANS - POWERLINE CONSTRUCTION				
CABLE SPLICER	\$49.54	4A	5A	
CERTIFIED LINE WELDER	\$45.15	4A	5A	
GROUNDPERSON	\$32.63	4A	5A	
HEAD GROUNDPERSON	\$34.43	4A	5A	
HEAVY LINE EQUIPMENT OPERATOR	\$45.15	4A	5A	
JACKHAMMER OPERATOR	\$34.43	4A	5A	
JOURNEY LEVEL LINEPERSON	\$45.15	4A	5A	

PIERCE COUNTY

Effective 09-01-04

<u>Classification</u>	<u>PREVAILING WAGE</u>	(See Benefit Code Key)		
		<u>Over Time Code</u>	<u>Holiday Code</u>	<u>Note Code</u>
LINE EQUIPMENT OPERATOR	\$38.37	4A	5A	
POLE SPRAYER	\$45.15	4A	5A	
POWDERPERSON	\$34.43	4A	5A	
ELECTRONIC & TELECOMMUNICATION TECHNICIANS				
JOURNEY LEVEL	\$12.07	1		
ELEVATOR CONSTRUCTORS				
MECHANIC	\$49.28	4A	6Q	
MECHANIC IN CHARGE	\$54.18	4A	6Q	
FENCE ERECTORS				
FENCE ERECTOR	\$16.57	1		
FLAGGERS				
JOURNEY LEVEL	\$27.93	1N	5D	
GLAZIERS				
JOURNEY LEVEL	\$39.96	2E	5G	
HEAT & FROST INSULATORS AND ASBESTOS WORKERS				
MECHANIC	\$41.93	1F	5E	
HOD CARRIERS & MASON TENDERS				
JOURNEY LEVEL	\$33.09	1N	5D	
INLAND BOATMEN				
CAPTAIN	\$35.14	1K	5B	
COOK	\$30.11	1K	5B	
DECKHAND	\$29.09	1K	5B	
ENGINEER/DECKHAND	\$31.66	1K	5B	
MATE, LAUNCH OPERATOR	\$33.24	1K	5B	
INSULATION APPLICATORS				
JOURNEY LEVEL	\$20.08	1		
IRONWORKERS				
JOURNEY LEVEL	\$43.12	1B	5A	
LABORERS				
ASPHALT RAKER	\$33.09	1N	5D	
BALLAST REGULATOR MACHINE	\$32.61	1N	5D	
BATCH WEIGHMAN	\$27.93	1N	5D	
BRUSH CUTTER	\$32.61	1N	5D	
BRUSH HOG FEEDER	\$32.61	1N	5D	
BURNERS	\$32.61	1N	5D	
CARPENTER TENDER	\$32.61	1N	5D	
CASSION WORKER	\$33.45	1N	5D	
CEMENT DUMPER/PAVING	\$33.09	1N	5D	
CEMENT FINISHER TENDER	\$32.61	1N	5D	
CHANGE-HOUSE MAN OR DRY SHACKMAN	\$32.61	1N	5D	
CHIPPING GUN (OVER 30 LBS)	\$33.09	1N	5D	
CHIPPING GUN (UNDER 30 LBS)	\$32.61	1N	5D	
CHOKER SETTER	\$32.61	1N	5D	
CHUCK TENDER	\$32.61	1N	5D	
CLEAN-UP LABORER	\$32.61	1N	5D	
CONCRETE DUMPER/CHUTE OPERATOR	\$33.09	1N	5D	
CONCRETE FORM STRIPPER	\$32.61	1N	5D	
CONCRETE SAW OPERATOR	\$33.09	1N	5D	
CRUSHER FEEDER	\$27.93	1N	5D	
CURING LABORER	\$32.61	1N	5D	
DEMOLITION, WRECKING & MOVING (INCLUDING CHARRED	\$32.61	1N	5D	
DITCH DIGGER	\$32.61	1N	5D	
DIVER	\$33.45	1N	5D	
DRILL OPERATOR (HYDRAULIC, DIAMOND)	\$33.09	1N	5D	
DRILL OPERATOR, AIRTRAC	\$33.45	1N	5D	
DUMPMAN	\$32.61	1N	5D	
EPOXY TECHNICIAN	\$32.61	1N	5D	
EROSION CONTROL WORKER	\$32.61	1N	5D	

PIERCE COUNTY

Effective 09-01-04

(See Benefit Code Key)

<u>Classification</u>	<u>PREVAILING WAGE</u>	<u>Over</u>		
		<u>Time</u> <u>Code</u>	<u>Holiday</u> <u>Code</u>	<u>Note</u> <u>Code</u>
FALLER/BUCKER, CHAIN SAW	\$33.09	1N	5D	
FINAL DETAIL CLEANUP (i.e., dusting, vacuuming, window cleaning; NOT construction debris cleanup)	\$25.61	1N	5D	
FINE GRADERS	\$32.61	1N	5D	
FIRE WATCH	\$27.93	1N	5D	
FORM SETTER	\$32.61	1N	5D	
GABION BASKET BUILDER	\$32.61	1N	5D	
GENERAL LABORER	\$32.61	1N	5D	
GRADE CHECKER & TRANSIT PERSON	\$33.09	1N	5D	
GRINDERS	\$32.61	1N	5D	
GROUT MACHINE TENDER	\$32.61	1N	5D	
GUARDRAIL ERECTOR	\$32.61	1N	5D	
HAZARDOUS WASTE WORKER LEVEL A	\$33.45	1N	5D	
HAZARDOUS WASTE WORKER LEVEL B	\$33.09	1N	5D	
HAZARDOUS WASTE WORKER LEVEL C	\$32.61	1N	5D	
HIGH SCALER	\$33.45	1N	5D	
HOD CARRIER/MORTARMAN	\$33.09	1N	5D	
JACKHAMMER	\$33.09	1N	5D	
LASER BEAM OPERATOR	\$33.09	1N	5D	
MANHOLE BUILDER-MUDMAN	\$33.09	1N	5D	
MATERIAL YARDMAN	\$32.61	1N	5D	
MINER	\$33.45	1N	5D	
NOZZLEMAN, CONCRETE PUMP, GREEN CUTTER WHEN USING HIGH PRESSURE AIR & WATER ON CONCRETE & ROCK, SANDBLAST, GUNITE, SHOTCRETE, WATER BLASTER	\$33.09	1N	5D	
PAVEMENT BREAKER	\$33.09	1N	5D	
PILOT CAR	\$27.93	1N	5D	
PIPE POT TENDER	\$33.09	1N	5D	
PIPE RELINER (NOT INSERT TYPE)	\$33.09	1N	5D	
PIPELAYER & CAULKER	\$33.09	1N	5D	
PIPELAYER & CAULKER (LEAD)	\$33.45	1N	5D	
PIPEWRAPPER	\$33.09	1N	5D	
POT TENDER	\$32.61	1N	5D	
POWDERMAN	\$33.45	1N	5D	
POWDERMAN HELPER	\$32.61	1N	5D	
POWERJACKS	\$33.09	1N	5D	
RAILROAD SPIKE PULLER (POWER)	\$33.09	1N	5D	
RE-TIMBERMAN	\$33.45	1N	5D	
RIPRAP MAN	\$32.61	1N	5D	
RODDER	\$33.09	1N	5D	
SCAFFOLD ERECTOR	\$32.61	1N	5D	
SCALE PERSON	\$32.61	1N	5D	
SIGNALMAN	\$32.61	1N	5D	
SLOPER (OVER 20")	\$33.09	1N	5D	
SLOPER SPRAYMAN	\$32.61	1N	5D	
SPREADER (CLARY POWER OR SIMILAR TYPES)	\$33.09	1N	5D	
SPREADER (CONCRETE)	\$33.09	1N	5D	
STAKE HOPPER	\$32.61	1N	5D	
STOCKPILER	\$32.61	1N	5D	
TAMPER & SIMILAR ELECTRIC, AIR & GAS	\$33.09	1N	5D	
TAMPER (MULTIPLE & SELF PROPELLED)	\$33.09	1N	5D	
TOOLROOM MAN (AT JOB SITE)	\$32.61	1N	5D	
TOPPER-TAILER	\$32.61	1N	5D	
TRACK LABORER	\$32.61	1N	5D	
TRACK LINER (POWER)	\$33.09	1N	5D	
TRUCK SPOTTER	\$32.61	1N	5D	
TUGGER OPERATOR	\$33.09	1N	5D	
VIBRATING SCREED (AIR, GAS, OR ELECTRIC)	\$32.61	1N	5D	

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VIBRATOR	\$33.09	1N	5D	
VINYL SEAMER	\$32.61	1N	5D	
WELDER	\$32.61	1N	5D	
WELL-POINT LABORER	\$33.09	1N	5D	
LANDSCAPE CONSTRUCTION				
IRRIGATION OR LAWN SPRINKLER INSTALLERS	\$9.90	1		
LANDSCAPE EQUIPMENT OPERATORS OR TRUCK DRIVERS	\$11.91	1		
LANDSCAPING OR PLANTING LABORERS	\$9.73	1		
LATHERS				
JOURNEY LEVEL	\$39.63	1M	5D	
PAINTERS				
JOURNEY LEVEL	\$30.76	2B	5A	
PLASTERERS				
JOURNEY LEVEL	\$39.93	1R	5A	
PLUMBERS & PIPEFITTERS				
JOURNEY LEVEL	\$44.62	1B	5A	
POWER EQUIPMENT OPERATORS				
ASSISTANT ENGINEERS	\$37.26	1T	5D	8L
BACKHOE, EXCAVATOR, SHOVEL (3 YD & UNDER)	\$39.88	1T	5D	8L
BACKHOE, EXCAVATOR, SHOVEL (OVER 3 YD & UNDER 6 YD)	\$40.34	1T	5D	8L
BACKHOE, EXCAVATOR, SHOVEL (6 YD AND OVER WITH	\$40.86	1T	5D	8L
BACKHOES, (75 HP & UNDER)	\$39.49	1T	5D	8L
BACKHOES, (OVER 75 HP)	\$39.88	1T	5D	8L
BARRIER MACHINE (ZIPPER)	\$39.88	1T	5D	8L
BATCH PLANT OPERATOR, CONCRETE	\$39.88	1T	5D	8L
BELT LOADERS (ELEVATING TYPE)	\$39.49	1T	5D	8L
BOBCAT	\$37.26	1T	5D	8L
BROOMS	\$37.26	1T	5D	8L
BUMP CUTTER	\$39.88	1T	5D	8L
CABLEWAYS	\$40.34	1T	5D	8L
CHIPPER	\$39.88	1T	5D	8L
COMPRESSORS	\$37.26	1T	5D	8L
CONCRETE FINISH MACHINE - LASER SCREED	\$37.26	1T	5D	8L
CONCRETE PUMPS	\$39.49	1T	5D	8L
CONCRETE PUMP-TRUCK MOUNT WITH BOOM ATTACHMENT	\$39.88	1T	5D	8L
CONVEYORS	\$39.49	1T	5D	8L
CRANES, THRU 19 TONS, WITH ATTACHMENTS	\$39.49	1T	5D	8L
CRANES, 20 - 44 TONS, WITH ATTACHMENTS	\$39.88	1T	5D	8L
CRANES, 45 TONS - 99 TONS, UNDER 150 FT OF BOOM (INCLUDING	\$40.34	1T	5D	8L
JIB WITH ATTACHMENTS)				
CRANES, 100 TONS - 199 TONS, OR 150 FT OF BOOM (INCLUDING JIB	\$40.86	1T	5D	8L
WITH ATTACHMENTS)				
CRANES, 200 TONS TO 300 TONS, OR 250 FT OF BOOM (INCLUDING JIB	\$41.40	1T	5D	8L
WITH ATTACHMENTS)				
CRANES, A-FRAME, 10 TON AND UNDER	\$37.26	1T	5D	8L
CRANES, A-FRAME, OVER 10 TON	\$39.49	1T	5D	8L
CRANES, OVER 300 TONS, OR 300' OF BOOM INCLUDING JIB WITH	\$41.92	1T	5D	8L
ATTACHMENTS				
CRANES, OVERHEAD, BRIDGE TYPE (20 - 44 TONS)	\$39.88	1T	5D	8L
CRANES, OVERHEAD, BRIDGE TYPE (45 - 99 TONS)	\$40.34	1T	5D	8L
CRANES, OVERHEAD, BRIDGE TYPE (100 TONS & OVER)	\$40.86	1T	5D	8L
CRANES, TOWER CRANE UP TO 175' IN HEIGHT, BASE TO BOOM	\$40.86	1T	5D	8L
CRANES, TOWER CRANE OVER 175' IN HEIGHT, BASE TO BOOM	\$41.40	1T	5D	8L
CRUSHERS	\$39.88	1T	5D	8L
DECK ENGINEER/DECK WINCHES (POWER)	\$39.88	1T	5D	8L
DERRICK, BUILDING	\$40.34	1T	5D	8L
DOZERS, D-9 & UNDER	\$39.49	1T	5D	8L
DRILL OILERS - AUGER TYPE, TRUCK OR CRANE MOUNT	\$39.49	1T	5D	8L

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DRILLING MACHINE	\$39.88	1T	5D	8L
ELEVATOR AND MANLIFT, PERMANENT AND SHAFT-TYPE	\$37.26	1T	5D	8L
EQUIPMENT SERVICE ENGINEER (OILER)	\$39.49	1T	5D	8L
FINISHING MACHINE/BIDWELL GAMACO AND SIMILAR EQUIP	\$39.88	1T	5D	8L
FORK LIFTS, (3000 LBS AND OVER)	\$39.49	1T	5D	8L
FORK LIFTS, (UNDER 3000 LBS)	\$37.26	1T	5D	8L
GRADE ENGINEER	\$39.49	1T	5D	8L
GRADECHECKER AND STAKEMAN	\$37.26	1T	5D	8L
GUARDRAIL PUNCH	\$39.88	1T	5D	8L
HOISTS, OUTSIDE (ELEVATORS AND MANLIFTS), AIR TUGGERS	\$39.49	1T	5D	8L
HORIZONTAL/DIRECTIONAL DRILL LOCATOR	\$39.49	1T	5D	8L
HORIZONTAL/DIRECTIONAL DRILL OPERATOR	\$39.88	1T	5D	8L
HYDRALIFTS/BOOM TRUCKS (10 TON & UNDER)	\$37.26	1T	5D	8L
HYDRALIFTS/BOOM TRUCKS (OVER 10 TON)	\$39.49	1T	5D	8L
LOADERS, OVERHEAD (6 YD UP TO 8 YD)	\$40.34	1T	5D	8L
LOADERS, OVERHEAD (8 YD & OVER)	\$40.86	1T	5D	8L
LOADERS, OVERHEAD (UNDER 6 YD), PLANT FEED	\$39.88	1T	5D	8L
LOCOMOTIVES, ALL	\$39.88	1T	5D	8L
MECHANICS, ALL	\$40.34	1T	5D	8L
MIXERS, ASPHALT PLANT	\$39.88	1T	5D	8L
MOTOR PATROL GRADER (FINISHING)	\$39.88	1T	5D	8L
MOTOR PATROL GRADER (NON-FINISHING)	\$39.49	1T	5D	8L
MUCKING MACHINE, MOLE, TUNNEL DRILL AND/OR SHIELD	\$40.34	1T	5D	8L
OIL DISTRIBUTORS, BLOWER DISTRIBUTION AND MULCH SEEDING OPERATOR	\$37.26	1T	5D	8L
PAVEMENT BREAKER	\$37.26	1T	5D	8L
PILEDRIVER (OTHER THAN CRANE MOUNT)	\$39.88	1T	5D	8L
PLANT OILER (ASPHALT, CRUSHER)	\$39.49	1T	5D	8L
POSTHOLE DIGGER, MECHANICAL	\$37.26	1T	5D	8L
POWER PLANT	\$37.26	1T	5D	8L
PUMPS, WATER	\$37.26	1T	5D	8L
QUAD 9, D-10, AND HD-41	\$40.34	1T	5D	8L
REMOTE CONTROL OPERATOR ON RUBBER TIRED EARTH MOVING EQUIP	\$40.34	1T	5D	8L
RIGGER AND BELLMAN	\$37.26	1T	5D	8L
ROLLAGON	\$40.34	1T	5D	8L
ROLLER, OTHER THAN PLANT ROAD MIX	\$37.26	1T	5D	8L
ROLLERS, PLANTMIX OR MULTILIFT MATERIALS	\$39.49	1T	5D	8L
ROTO-MILL, ROTO-GRINDER	\$39.88	1T	5D	8L
SAWS, CONCRETE	\$39.49	1T	5D	8L
SCRAPERS - SELF PROPELLED, HARD TAIL END DUMP, ARTICULATING OFF-ROAD EQUIPMENT (UNDER 45 YD)	\$39.88	1T	5D	8L
SCRAPERS - SELF PROPELLED, HARD TAIL END DUMP, ARTICULATING OFF-ROAD EQUIPMENT (45 YD AND OVER)	\$40.34	1T	5D	8L
SCRAPERS, CONCRETE AND CARRY ALL	\$39.49	1T	5D	8L
SCREED MAN	\$39.88	1T	5D	8L
SHOTCRETE GUNITE	\$37.26	1T	5D	8L
SLIPFORM PAVERS	\$40.34	1T	5D	8L
SPREADER, TOPSIDE OPERATOR - BLAW KNOX	\$39.88	1T	5D	8L
SUBGRADE TRIMMER	\$39.88	1T	5D	8L
TOWER BUCKET ELEVATORS	\$39.49	1T	5D	8L
TRACTORS, (75 HP & UNDER)	\$39.49	1T	5D	8L
TRACTORS, (OVER 75 HP)	\$39.88	1T	5D	8L
TRANSFER MATERIAL SERVICE MACHINE	\$39.88	1T	5D	8L
TRANSPORTERS, ALL TRACK OR TRUCK TYPE	\$40.34	1T	5D	8L
TRENCHING MACHINES	\$39.49	1T	5D	8L
TRUCK CRANE OILER/DRIVER (UNDER 100 TON)	\$39.49	1T	5D	8L
TRUCK CRANE OILER/DRIVER (100 TON & OVER)	\$39.88	1T	5D	8L

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TRUCK MOUNT PORTABLE CONVEYER	\$39.88	1T	5D	8L
WHEEL TRACTORS, FARMALL TYPE	\$37.26	1T	5D	8L
YO YO PAY DOZER	\$39.88	1T	5D	8L
POWER LINE CLEARANCE TREE TRIMMERS				
JOURNEY LEVEL IN CHARGE	\$33.06	4A	5A	
SPRAY PERSON	\$31.34	4A	5A	
TREE EQUIPMENT OPERATOR	\$31.76	4A	5A	
TREE TRIMMER	\$29.48	4A	5A	
TREE TRIMMER GROUNDPERSON	\$21.94	4A	5A	
REFRIGERATION & AIR CONDITIONING MECHANICS				
MECHANIC	\$44.11	1B	5A	
ROOFERS				
JOURNEY LEVEL	\$31.54	2O	5A	
USING IRRITABLE BITUMINOUS MATERIALS	\$34.54	2O	5A	
SHEET METAL WORKERS				
JOURNEY LEVEL (FIELD OR SHOP)	\$46.74	1J	6L	
SOFT FLOOR LAYERS				
JOURNEY LEVEL	\$30.78	1B	5A	
SOLAR CONTROLS FOR WINDOWS				
JOURNEY LEVEL	\$10.31	1B	5O	
SPRINKLER FITTERS (FIRE PROTECTION)				
JOURNEY LEVEL	\$48.19	1B	5C	
SURVEYORS				
CHAIN PERSON	\$9.35	1		
INSTRUMENT PERSON	\$11.40	1		
PARTY CHIEF	\$13.40	1		
TELEPHONE LINE CONSTRUCTION - OUTSIDE				
CABLE SPLICER	\$28.29	2B	5A	
HOLE DIGGER/GROUND PERSON	\$15.91	2B	5A	
INSTALLER (REPAIRER)	\$27.13	2B	5A	
JOURNEY LEVEL TELEPHONE LINEPERSON	\$26.32	2B	5A	
SPECIAL APPARATUS INSTALLER I	\$28.29	2B	5A	
SPECIAL APPARATUS INSTALLER II	\$27.72	2B	5A	
TELEPHONE EQUIPMENT OPERATOR (HEAVY)	\$28.29	2B	5A	
TELEPHONE EQUIPMENT OPERATOR (LIGHT)	\$26.32	2B	5A	
TELEVISION GROUND PERSON	\$15.10	2B	5A	
TELEVISION LINEPERSON/INSTALLER	\$20.11	2B	5A	
TELEVISION SYSTEM TECHNICIAN	\$23.80	2B	5A	
TELEVISION TECHNICIAN	\$21.43	2B	5A	
TREE TRIMMER	\$26.32	2B	5A	
TERRAZZO WORKERS & TILE SETTERS				
JOURNEY LEVEL	\$37.03	1H	5A	
TILE, MARBLE & TERRAZZO FINISHERS				
FINISHER	\$30.86	1H	5A	
TRAFFIC CONTROL STRIPERS				
JOURNEY LEVEL	\$31.90	1K	5A	
TRUCK DRIVERS				
ASPHALT MIX	\$22.49	1		
DUMP TRUCK	\$22.56	1		
DUMP TRUCK & TRAILER	\$22.56	1		
OTHER TRUCKS	\$30.20	1		
TRANSIT MIXER	\$23.29	2C	5A	
WELL DRILLERS & IRRIGATION PUMP INSTALLERS				
IRRIGATION PUMP INSTALLER	\$16.09	1		
OILER	\$15.39	1		
WELL DRILLER	\$18.30	1		

Washington State Department of Labor and Industries
Policy Statement
(Regarding the Production of "Standard" or "Non-standard" Items)

Below is the department's (State L&I's) list of criteria to be used in determining whether a prefabricated item is "standard" or "non-standard". For items not appearing on WSDOT's predetermined list, these criteria shall be used by the Contractor (and the Contractor's subcontractors, agents to subcontractors, suppliers, manufacturers, and fabricators) to determine coverage under RCW 39.12. The production, in the State of Washington, of non-standard items is covered by RCW 39.12, and the production of standard items is not. The production of any item outside the State of Washington is not covered by RCW 39.12.

1. Is the item fabricated for a public works project? If not, it is not subject to RCW 39.12. If it is, go to question 2.
2. Is the item fabricated on the public works jobsite? If it is, the work is covered under RCW 39.12. If not, go to question 3.
3. Is the item fabricated in an assembly/fabrication plant set up for, and dedicated primarily to, the public works project? If it is, the work is covered by RCW 39.12. If not, go to question 4.
4. Does the item require any assembly, cutting, modification or other fabrication by the supplier? If not, the work is not covered by RCW 39.12. If yes, go to question 5.
5. Is the prefabricated item intended for the public works project typically an inventory item which could reasonably be sold on the general market? If not, the work is covered by RCW 39.12. If yes, go to question 6.
6. Does the specific prefabricated item, generally defined as standard, have any unusual characteristics such as shape, type of material, strength requirements, finish, etc? If yes, the work is covered under RCW 39.12.

Any firm with questions regarding the policy, WSDOT's Predetermined List, or for determinations of covered and non-covered workers shall be directed to State L&I at (360) 902-5330.

**WSDOT's
Predetermined List for
Suppliers - Manufacturers - Fabricators**

Below is a list of potentially prefabricated items, originally furnished by WSDOT to Washington State Department of Labor and Industries, that may be considered non-standard and therefore covered by the prevailing wage law, RCW 39.12. Items marked with an X in the "YES" column should be considered to be non-standard and therefore covered by RCW 39.12. Items marked with an X in the "NO" column should be considered to be standard and therefore not covered. Of course, exceptions to this general list may occur, and in that case shall be evaluated according to the criteria described in State and L&I's policy statement.

ITEM DESCRIPTION	YES	NO
1. Manhole Ring & Cover - manhole type 1, 2, 3, and 4 for bridges. For use with Catch Basin type 2. The casting to meet AASHTO-M-105, class 30 gray iron casting. See Std. Plan B-1f, B-23a, B-23b, B-23c, and B-23d.		X
2. Frame & Grate - frame and Grate for Catch Basin type 1, 1L, 1P, 2, 3, 4 and Concrete Inlets. Cast frame may be grade 70-36 steel, class 30 gray cast iron or grade 80-55-06 ductile iron. The cast grate may be grade 70-36 steel or grade 80-55-06 ductile iron. See Std. Plan B-2, B-2a, and B-2b.		X
3. Grate Inlet & Drop Inlet Frame & Grate - Frame and Grate for Grate Inlets Type 1 or 2 or Drop Inlet. Angle iron frame to be cast into top of inlet. See Std. Plan B-4b or B-4h. Frames & Grates to be galvanized.		X
4. Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes smaller than 60 inch diameter.		X
5. Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes larger than 60 inch diameter.		X

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| 6. | Corrugated Steel Pipe - Steel lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, 1 thru 5. | X |
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| 7. | Corrugated Aluminum Pipe - Aluminum lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, #5. | X |
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| 8. | Anchor Bolts & Nuts - Anchor Bolts and Nuts, for mounting sign structures, luminaries and other items, shall be made from commercial bolt stock. See Contract Plans and Std. Plans for size and material type. | X |
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| 9. | Aluminum Pedestrian Handrail - Pedestrian handrail conforming to the type and material specifications set forth in the contract plans. Welding of aluminum shall be in accordance with Section 9-28.15(3). | X |
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| 10. | Major Structural Steel Fabrication - Fabrication of major steel items such as trusses, beams, girders, etc., for bridges. | X |
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| 11. | Minor Structural Steel Fabrication - Fabrication of minor steel items such as special hangers, brackets, access doors for structures, access ladders for irrigation boxes, bridge expansion joint systems, etc., involving welding, cutting, punching and/or boring of holes. See Contact Plans for item description and shop drawings. | X |
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| 12. | Aluminum Bridge Railing Type BP - Metal bridge railing conforming to the type and material specifications set forth in the Contract Plans. Welding of aluminum shall be in accordance with Section 9-28.15(3). | X |
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	YES	NO
13. Concrete Piling--Precast-Prestressed concrete piling for use as 55 and 70 ton concrete piling. Concrete to conform to Section 9-19.1 of Std. Spec.. Shop drawings for approval shall be provided per Section 6-05.3(3) of the Std. Spec.	X	
14. Manhole Type 1, 2, 3 and 4 - Precast Manholes with risers and flat top slab and/or cones. See Std. Plans.		X
15. Drywell - Drywell as specified in Contract Plans.		X
16. Catch Basin - Catch Basin type 1, 1L, 1P, 2, 3, and 4, including risers, frames maybe cast into riser. See Std. Plans.		X
17. Precast Concrete Inlet - Concrete Inlet with risers, frames may be cast into risers. See Std. Plans.		X
18. Drop Inlet Type 1 - Drop Inlet Type 1 with support angles and grate. See Std. Plans B-4f and B-4h.		X
19. Drop Inlet Type 2 - Drop Inlet type 2 with support angles and grate. See Std. Plans B-4g and B-4h.		X
20. Grate Inlet Type 2 - Grate Inlet Type 2 with risers and top unit with bearing angles.		X
21. Precast Concrete Utility Vaults - Precast Concrete utility vaults of various sizes. Used for in ground storage of utility facilities and controls. See Contract Plans for size and construction requirements. Shop drawings are to be provided for approval prior to casting.		X

	YES	NO
22. Vault Risers - For use with Valve Vaults and Utilities Vaults.		X
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23. Valve Vault - For use with underground utilities. See Contract Plans for details.		X
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24. Precast Concrete Barrier - Precast Concrete Barrier for use as new barrier or may also be used as Temporary Concrete Barrier. Only new state approved barrier may be used as permanent barrier.		X
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25. Reinforced Earth Wall Panels - Reinforced Earth Wall Panels in size and shape as shown in the Plans. Fabrication plant has annual approval for methods and materials to be used. See Shop Drawing. Fabrication at other locations may be approved, after facilities inspection, contact HQ. Lab.	X	
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26. Precast Concrete Walls - Precast Concrete Walls - tilt-up wall panel in size and shape as shown in Plans. Fabrication plant has annual approval for methods and materials to be used.	X	
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27. Precast Railroad Crossings - Concrete Crossing Structure Slabs.	X	
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28. 12, 18 and 26 inch Standard Precast Prestressed Girder - Standard Precast Prestressed Girder for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)c.	X	
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	YES	NO
29. Prestressed Concrete Girder Series 4-14 - Prestressed Concrete Girders for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)c.	X	
30. Prestressed Tri-Beam Girder - Prestressed Tri-Beam Girders for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)c.	X	
31. Prestressed Precast Hollow-Core Slab - Precast Prestressed Hollow-core slab for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)c.	X	
32. Prestressed-Bulb Tee Girder - Bulb Tee Prestressed Girder for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(26)A.	X	
33. Monument Case and Cover - To meet AASHTO-M-105 class 30 gray iron casting. See Std. Plan H-7.		X
34. Cantilever Sign Structure - Cantilever Sign Structure fabricated from steel tubing meeting AASHTO-M-183. See Std. Plans G-3, G-3a, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.	X	
35. Mono-tube Sign Structures - Mono-tube Sign Bridge fabricated to details shown in the Plans. Shop drawings for approval are required prior to fabrication.	X	

	YES	NO
36. Steel Sign Bridges - Steel Sign Bridges fabricated from steel tubing meeting AASHTO-M-138 for Aluminum Alloys. See Std. Plans G-2, G2a, G-2b, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.	X	
37. Steel Sign Post - Fabricated steel sign posts as detailed in Std. Plan G-8. Shop drawings for approval are to be provided prior to fabrication.		X
38. Light Standard-Prestressed - Spun, prestressed, hollow, concrete poles.		X
39. Light Standards - Lighting Standards for use on highway illumination systems, poles to be fabricated to conform with methods and materials as specified on Std. Plan J-1, J-1a, and J-1b. See Special Provisions for pre-approved drawings.	X	
40. Traffic Signal Standards - Traffic Signal Standards for use on highway and/or street signal systems. Standards to be fabricated to conform with methods and material as specified on Std. Plans J-1, J-7a, J-7c, and J-8. See Special Provisions for pre-approved drawings.	X	
41. Traffic Curb, Type A or C Precast - Type A or C Precast traffic curb, for use in construction of raised channelization, and other traffic delineation uses such as parking lots, rest areas, etc. NOTE: Acceptance based on inspection of Fabrication Plant and an advance sample of curb section to be submitted for approval by Engineer.		X

	YES	NO
42. Traffic Signs - Prior to approval of a Fabricator of Traffic Signs, the sources of the following signing materials must be submitted and approved for reflective sheeting, legend material, and aluminum sheeting. NOTE: *** Fabrication inspection required. Only signs tagged "Fabrication Approved" by WSDOT Sign Fabrication Inspector to be installed.	X custom msg	X std. msg
43. Cutting & bending reinforcing steel		X
44. Guardrail components	X custom end sect.	X standard sect.
45. Aggregates/Concrete mixes	Covered by WAC 296-127-018	
46. Asphalt	Covered by WAC 296-127-018	
47. Fiber fabrics		X
48. Electrical wiring/components		X
49. treated or untreated timber piles		X
50. Girder pads (elastomeric bearing)	X	

	YES	NO
51. Standard Dimension lumber		X

52. Irrigation components		X

53. Fencing materials		X

54. Guide Posts		X

55. Traffic Buttons		X

56. Epoxy		X

57. Cribbing		X

58. Water distribution materials		X

59. Steel "H" piles		X

60. Steel pipe for concrete pile casings		X

61. Steel pile tips, standard		X

62. Steel pile tips, custom	X	

**WASHINGTON STATE PREVAILING WAGE RATES - EFFECTIVE 09/01/04
METAL FABRICATION (IN SHOP)**

<u>Classification</u>	<u>PREVAILING WAGE</u>	<u>Over Time Code</u>	<u>Holiday Code</u>	<u>Note Code</u>
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Counties Covered:
Adams, Asotin, Columbia, Douglas, Ferry, Franklin, Garfield
Kittitas, Lincoln, Okanogan, Pend Oreille, Stevens, Walla Walla and Whitman

Fitter	12.76	1		
Welder	12.76	1		
Machine Operator	12.66	1		
Painter	10.20	1		
Laborer	8.13	1		

Counties Covered:
Benton

Welder	16.70	1		
Machine Operator	10.53	1		
Painter	9.76	1		

Counties Covered:
Chelan

Fitter	15.04	1		
Welder	12.24	1		
Machine Operator	9.71	1		
Painter	9.93	1		
Laborer	8.77	1		

Counties Covered:
Clallam, Grays Harbor, Island, Jefferson,
Lewis, Mason, Pacific, San Juan and Skagit

Fitter	15.16	1		
Welder	15.16	1		
Machine Operator	10.66	1		
Painter	11.41	1		
Laborer	11.13	1		

METAL FABRICATION (IN SHOP) 09/01/04

<u>Classification</u>	<u>PREVAILING WAGE</u>	<u>Over Time Code</u>	<u>Holiday Code</u>	<u>Note Code</u>
Counties Covered: Clark				
Layerout	24.96	1J	6B	
Fitter	24.58	1J	6B	
Welder	24.02	1J	6B	
Painter	21.35	1J	6B	
Machine Operator	18.63	1J	6B	
Laborer	18.08	1J	6B	
Counties Covered: Snohomish				
Fitter	15.38	1		
Welder	15.38	1		
Machine Operator	8.84	1		
Painter	9.98	1		
Laborer	9.79	1		
Counties Covered: Spokane				
Fitter	12.59	1		
Welder	10.80	1		
Machine Operator	13.26	1		
Painter	10.27	1		
Laborer	7.98	1		
Counties Covered: Thurston				
Layerout	25.07	1R	6T	
Fitter	23.02	1R	6T	
Welder	20.99	1R	6T	
Machine Operator	18.74	1R	6T	
Laborer	14.88	1R	6T	
Counties Covered: Whatcom				
Fitter/Welder	13.81	1		
Machine Operator	13.81	1		
Laborer	9.00	1		

METAL FABRICATION (IN SHOP) 09/01/04

<u>Classification</u>	<u>PREVAILING WAGE</u>	<u>Over Time Code</u>	<u>Holiday Code</u>	<u>Note Code</u>
Counties Covered: Yakima				
Fitter	12.00	1		
Welder	11.32	1		
Machine Operator	11.32	1		
Painter	12.00	1		
Laborer	10.31	1		
Counties Covered: Cowlitz				
Fitter	21.99	1B	6V	
Welder	21.99	1B	6V	
Machine Operator	21.99	1B	6V	
Laborer	15.87	1B	6V	
Counties Covered: Grant				
Fitter	10.79	1		
Welder	10.79	1		
Painter	7.45	1		
Counties Covered: King				
Fitter	15.86	1		
Welder	15.48	1		
Machine Operator	13.04	1		
Painter	11.10	1		
Laborer	9.78	1		
Counties Covered: Kitsap				
Fitter	26.96	1		
Welder	13.83	1		
Machine Operator	13.83	1		
Laborer	7.16	1		

METAL FABRICATION (IN SHOP) 09/01/04

<u>Classification</u>	<u>PREVAILING WAGE</u>	<u>Over Time Code</u>	<u>Holiday Code</u>	<u>Note Code</u>
<p>Counties Covered: Klickitat, Skamania and Wahkiakum</p>				
Fitter/Welder	16.99	1		
Machine Operator	17.21	1		
Painter	17.03	1		
Laborer	10.44	1		
<p>Counties Covered: Pierce</p>				
Fitter	15.25	1		
Welder	13.98	1		
Machine Operator	13.98	1		
Laborer	9.25	1		

**WASHINGTON STATE PREVAILING WAGE RATES - EFFECTIVE 09/01/04
FABRICATED PRECAST CONCRETE PRODUCTS**

<u>Classification</u>	<u>PREVAILING WAGE</u>	<u>Over Time Code</u>	<u>Holiday Code</u>	<u>Note Code</u>
<p align="center">Counties Covered: Adams, Asotin, Benton, Columbia, Douglas, Ferry, Garfield, Grant, Lincoln, Okanogan, Pend Oreille, Stevens, Walla Walla, and Whitman</p>				
All Classifications	9.96	1		
<p align="center">Counties Covered: Franklin</p>				
All Classifications	11.50	1		
<p align="center">Counties Covered: King</p>				
All Classifications	11.60	2K	6S	
<p align="center">Counties Covered: Pierce</p>				
All Classifications	9.28	1		
<p align="center">Counties Covered: Chelan, Kittitas, Klickitat and Skamania</p>				
All Classifications	8.61	1		
<p align="center">Counties Covered: Clallam, Clark, Cowlitz, Grays Harbor, Island, Jefferson, Kitsap, Lewis, Mason, Pacific, San Juan, Skagit, Snohomish, Thurston, Wahkiakum</p>				
All Classifications	13.50	1		

**WASHINGTON STATE PREVAILING WAGE RATES - EFFECTIVE 09/01/04
FABRICATED PRECAST CONCRETE PRODUCTS**

<u>Classification</u>	<u>PREVAILING WAGE</u>	<u>Over Time Code</u>	<u>Holiday Code</u>	<u>Note Code</u>
Counties Covered: Spokane				
All Classifications	20.23	1		
Counties Covered: Yakima				
Craftsman	8.65	1		
Laborer	7.16	1		
Counties Covered: Whatcom				
All Classifications	13.67	1		

Washington State Department of Labor and Industries
Policy Statements
(Regarding Production and Delivery of Gravel, Concrete, Asphalt, etc.)

The following two letters from the State Department of Labor and Industries (State L&I) dated August 18, 1992 and June 18, 1999, clarify the intent and establish policy for administering the provisions of WAC 296-127-018 COVERAGE AND EXEMPTIONS OF WORKERS INVOLVED IN THE PRODUCTION AND DELIVERY OF GRAVEL, CONCRETE, ASPHALT, OR SIMILAR MATERIALS.

Any firm with questions regarding the policy, these letters, or for determinations of covered and non-covered workers shall be directed to State L&I at (360) 902-5330.

Effective September 1, 1993, minimum prevailing wages for all work covered by WAC 296-127-018 for the production and/or delivery of materials to a public works contract will be found under the regular classification of work for Teamsters, Power Equipment Operators, etc.

**ESAC DIVISION - TELEPHONE (206) 586-6887
PO BOX 44540, OLYMPIA, WASHINGTON 98504-4540**

August 18, 1992

TO: All Interested Parties

FROM: Jim P. Christensen
Acting Industrial Statistician

SUBJECT: Materials Suppliers - WAC 296-127-018

This memo is intended to provide greater clarity regarding the application of WAC 296-127-018 to awarding agencies, contractors, subcontractors, material suppliers and other interested parties. The information contained herein should not be construed to cover all possible scenarios which might require the payment of prevailing wage. The absence of a particular activity under the heading "PREVAILING WAGES ARE REQUIRED FOR" does not mean that the activity is not covered.

Separate Material Supplier Equipment Operator rates have been eliminated. For those cases where a production facility is set up for the specific purpose of supplying materials to a public works construction site, prevailing wage rates for operators of equipment such as crushers and batch plants can be found under Power Equipment Operators.

PREVAILING WAGES ARE REQUIRED FOR:

1. Hauling materials away from a public works project site, including excavated materials, demolished materials, etc.
2. Delivery of materials to a public works project site using a method that involves incorporation of the delivered materials into the project site, such as spreading, leveling, rolling, etc.
3. The production of materials at a facility that is established for the specific, but not necessarily exclusive, purpose of supplying materials for a public works project.
4. Delivery of the materials mentioned in #3 above, regardless of the method of delivery.

PREVAILING WAGES ARE NOT REQUIRED FOR:

1. The production of materials by employees of an established materials supplier, in a permanent facility, as well as the delivery of these materials, as long as delivery does not include incorporation of the materials into the job site.
2. Delivery of materials by a common or contract carrier, as long as delivery does not include incorporation of the materials into the job site.
3. Production of materials for unspecified future use.



STATE OF WASHINGTON
DEPARTMENT OF LABOR AND INDUSTRIES

June 18, 1999

TO: Kerry S. Radcliff, Editor
Washington State Register

FROM: Gary Moore, Director
Department of Labor and Industries

SUBJECT: **Notice re WAC 296-127-018, Coverage and exemptions of workers involved in the production and delivery of gravel, concrete, asphalt, or similar materials**

The department wishes to publish the following Notice in the next edition of the Washington State Register:

NOTICE

Under the current material supplier regulations, WAC 296-127-018, the department takes the position that prevailing wages do not apply to the delivery of wet concrete to public works sites, unless the drivers do something more than just deliver the concrete. Drivers delivering concrete into a crane and bucket, hopper of a pump truck, or forms or footings, are not entitled to prevailing wages unless they operate machinery or use tools that screed, float, or put a finish on the concrete.

This position applies only to the delivery of wet concrete. It does not extend to the delivery of asphalt, sand, gravel, crushed rock, or other similar materials covered under WAC 296-127-018. The department's position applies only to this regulation.

If you need additional information regarding this matter, please contact Greg Mowat, Program Manager, Employment Standards, at P.O. Box 44510, Olympia, WA 98504-4510, or call (360) 902-5310.

Please publish the above Notice in WSR 99-13. If you have questions or need additional information, please call Selwyn Walters at 902-4206. Thank you.

Cc: Selwyn Walters, Rules Coordinator
Patrick Woods, Assistant Director
Greg Mowat, Program Manager

BENEFIT CODE KEY - EFFECTIVE 09-01-04

OVERTIME CODES

OVERTIME CALCULATIONS ARE BASED ON THE HOURLY RATE ACTUALLY PAID TO THE WORKER. ON PUBLIC WORKS PROJECTS, THE HOURLY RATE MUST BE NOT LESS THAN THE PREVAILING RATE OF WAGE MINUS THE HOURLY RATE OF THE COST OF FRINGE BENEFITS ACTUALLY PROVIDED FOR THE WORKER.

1. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
 - A. ALL HOURS WORKED ON SATURDAYS, SUNDAYS AND HOLIDAYS SHALL ALSO BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
 - B. ALL HOURS WORKED ON SATURDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - C. ALL HOURS WORKED ON SUNDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - D. THE FIRST EIGHT (8) HOURS ON SATURDAYS OF A FIVE - EIGHT HOUR WORK WEEK AND THE FIRST EIGHT (8) HOURS WORKED ON A FIFTH CALENDAR DAY, EXCLUDING SUNDAY, IN A FOUR - TEN HOUR SCHEDULE, SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY ON SATURDAY; ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS IN A FIFTH CALENDAR WEEKDAY OF A FOUR - TEN HOUR SCHEDULE; ALL HOURS WORKED IN EXCESS OF TEN (10) HOURS PER DAY MONDAY THROUGH FRIDAY, AND ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - E. ALL HOURS WORKED IN EXCESS OF 10 PER DAY SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE. THE FIRST EIGHT (8) HOURS ON SATURDAY SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS ON SATURDAY, AND ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - F. THE FIRST EIGHT (8) HOURS ON SATURDAY SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS ON SATURDAY, AND ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS (EXCEPT LABOR DAY) SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON LABOR DAY SHALL BE PAID AT THREE TIMES THE HOURLY RATE OF WAGE.
 - G. THE FIRST TEN (10) HOURS WORKED ON SATURDAYS AND THE FIRST TEN (10) HOURS WORKED ON A FIFTH CALENDAR WEEKDAY IN A FOUR - TEN HOUR SCHEDULE, SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED IN EXCESS OF TEN (10) HOURS PER DAY MONDAY THROUGH SATURDAY, AND ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - H. ALL HOURS WORKED ON SATURDAYS (EXCEPT MAKEUP DAYS IF WORK IS LOST DUE TO INCLEMENT WEATHER CONDITIONS OR EQUIPMENT BREAKDOWN) SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - I. ALL HOURS WORKED ON SATURDAY SHALL BE PAID AT ONE AND ONE-HALF THE HOURLY RATE OF WAGE. WORK PERFORMED ON SUNDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE. WORK PERFORMED ON A HOLIDAY SHALL BE PAID ONE AND ONE-HALF TIMES THEIR HOURLY RATE FOR ACTUAL HOURS WORKED PLUS EIGHT (8) HOURS OF STRAIGHT TIME FOR THE HOLIDAY.
 - J. THE FIRST EIGHT (8) HOURS ON SATURDAY SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS ON SATURDAY, AND ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - K. ALL HOURS WORKED ON SATURDAYS AND SUNDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - L. ALL HOURS WORKED ON SATURDAYS, SUNDAYS AND HOLIDAYS (EXCEPT THANKSGIVING DAY AND CHRISTMAS DAY) SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON THANKSGIVING DAY AND CHRISTMAS DAY SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - M. ALL HOURS WORKED ON SATURDAYS (EXCEPT MAKEUP DAYS IF WORK IS LOST DUE TO INCLEMENT WEATHER CONDITIONS) SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - N. ALL HOURS WORKED ON SATURDAYS (EXCEPT MAKEUP DAYS) SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.

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- P. ALL HOURS WORKED ON SATURDAYS (EXCEPT MAKEUP DAYS) AND SUNDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
- Q. ALL HOURS WORKED ON SATURDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS (EXCEPT CHRISTMAS DAY) SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON CHRISTMAS DAY SHALL BE PAID AT TWO AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
- R. ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE.
- 1. T. ALL HOURS WORKED ON SATURDAYS, EXCEPT MAKE-UP DAYS, SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED AFTER 6:00PM SATURDAY TO 6:00AM MONDAY AND ON HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
- U. ALL HOURS WORKED ON SATURDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS (EXCEPT LABOR DAY) SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON LABOR DAY SHALL BE PAID AT THREE TIMES THE HOURLY RATE OF WAGE.
- W. ALL HOURS WORKED ON SATURDAYS AND SUNDAYS (EXCEPT MAKE-UP DAYS) SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON HOLIDAYS SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE.
- 2. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
 - A. THE FIRST SIX (6) HOURS ON SATURDAY SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED IN EXCESS OF SIX (6) HOURS ON SATURDAY AND ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE.
 - B. ALL HOURS WORKED ON HOLIDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
 - C. ALL HOURS WORKED ON SUNDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON HOLIDAYS SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE.
 - D. ALL HOURS WORKED ON SATURDAYS AND SUNDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. THE FIRST EIGHT (8) HOURS WORKED ON HOLIDAYS SHALL BE PAID AT STRAIGHT TIME IN ADDITION TO THE HOLIDAY PAY. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS ON HOLIDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
 - E. ALL HOURS WORKED ON SATURDAYS OR HOLIDAYS (EXCEPT LABOR DAY) SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS OR ON LABOR DAY SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE.
 - F. THE FIRST EIGHT (8) HOURS WORKED ON HOLIDAYS SHALL BE PAID AT THE STRAIGHT HOURLY RATE OF WAGE IN ADDITION TO THE HOLIDAY PAY. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS ON HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
 - G. ALL HOURS WORKED ON SUNDAY SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON PAID HOLIDAYS SHALL BE PAID AT TWO AND ONE-HALF TIMES THE HOURLY RATE OF WAGE INCLUDING HOLIDAY PAY.
 - H. ALL HOURS WORKED ON SATURDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON HOLIDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE IN ADDITION TO THE HOLIDAY PAY.
 - I. ALL HOURS WORKED ON SATURDAYS AND HOLIDAYS (EXCEPT LABOR DAY) SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SUNDAYS AND ON LABOR DAY SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE.
 - J. ALL HOURS WORKED ON SUNDAYS SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON PAID HOLIDAYS SHALL BE PAID AT TWO AND ONE-HALF TIMES THE HOURLY RATE OF WAGE, INCLUDING THE HOLIDAY PAY. ALL HOURS WORKED ON UNPAID HOLIDAYS SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE.
 - K. ALL HOURS WORKED ON HOLIDAYS SHALL BE PAID AT TWO TIMES THE HOURLY RATE OF WAGE IN ADDITION TO THE HOLIDAY PAY.

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- M. ALL HOURS WORKED ON SATURDAYS, SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.
- O. ALL HOURS WORKED ON SUNDAYS AND HOLIDAYS SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
- 4. A. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE. ALL HOURS WORKED ON SATURDAYS, SUNDAYS AND HOLIDAYS SHALL BE PAID AT DOUBLE THE HOURLY RATE OF WAGE.

HOLIDAY CODES

- 5. A. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, FRIDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (7).
- B. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, FRIDAY AFTER THANKSGIVING DAY, THE DAY BEFORE CHRISTMAS, AND CHRISTMAS DAY (8).
- C. HOLIDAYS: NEW YEAR'S DAY, PRESIDENTS' DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (8).
- D. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AND SATURDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (8).
- E. HOLIDAYS: NEW YEAR'S DAY, PRESIDENTS' DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, PRESIDENTIAL ELECTION DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (9).
- G. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE LAST WORK DAY BEFORE CHRISTMAS DAY, AND CHRISTMAS DAY (7).
- H. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, THANKSGIVING DAY, THE DAY AFTER THANKSGIVING DAY, AND CHRISTMAS (6).
- I. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS DAY (6).
- N. HOLIDAYS: NEW YEAR'S DAY, PRESIDENTS' DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, VETERANS' DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (9).
- O. PAID HOLIDAYS: NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS DAY (6).
- P. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, FRIDAY AND SATURDAY AFTER THANKSGIVING DAY, THE DAY BEFORE CHRISTMAS, AND CHRISTMAS DAY (9).
- Q. PAID HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS DAY (6).
- R. PAID HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, DAY AFTER THANKSGIVING DAY, ONE-HALF DAY BEFORE CHRISTMAS DAY, AND CHRISTMAS DAY. (7 1/2).
- S. PAID HOLIDAYS: NEW YEAR'S DAY, PRESIDENTS' DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS DAY (7).
- T. PAID HOLIDAYS: SEVEN (7) PAID HOLIDAYS.
- V. PAID HOLIDAYS: SIX (6) PAID HOLIDAYS.
- W. PAID HOLIDAYS: NINE (9) PAID HOLIDAYS.
- X. HOLIDAYS: AFTER 520 HOURS - NEW YEAR'S DAY, THANKSGIVING DAY AND CHRISTMAS DAY. AFTER 2080 HOURS - NEW YEAR'S DAY, WASHINGTON'S BIRTHDAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, CHRISTMAS DAY AND A FLOATING HOLIDAY (8).
- Y. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, PRESIDENTIAL ELECTION DAY, THANKSGIVING DAY, THE FRIDAY FOLLOWING THANKSGIVING DAY, AND CHRISTMAS DAY (8).

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- Z. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, VETERANS DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (8).
6. A. PAID HOLIDAYS: NEW YEAR'S DAY, PRESIDENTS' DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (8).
- B. PAID HOLIDAYS: NEW YEAR'S EVE DAY, NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, DAY AFTER THANKSGIVING DAY, CHRISTMAS EVE DAY, CHRISTMAS DAY. (9)
- C. HOLIDAYS: NEW YEAR'S DAY, PRESIDENTS' DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE DAY AFTER THANKSGIVING DAY, THE LAST WORK DAY BEFORE CHRISTMAS DAY, AND CHRISTMAS DAY (9).
- D. PAID HOLIDAYS: NEW YEAR'S DAY, PRESIDENTS' DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, CHRISTMAS DAY, THE DAY BEFORE OR THE DAY AFTER CHRISTMAS DAY (9).
6. H. HOLIDAYS: NEW YEAR'S DAY, MARTIN LUTHER KING JR. DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (8).
- I. PAID HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, FRIDAY AFTER THANKSGIVING DAY, AND CHRISTMAS DAY (7).
- L. HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, THE LAST WORKING DAY BEFORE CHRISTMAS DAY, AND CHRISTMAS DAY. (8)
- Q. PAID HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, VETERAN'S DAY, THANKSGIVING DAY, THE DAY AFTER THANKSGIVING DAY AND CHRISTMAS DAY. UNPAID HOLIDAY: PRESIDENTS' DAY.
- S. PAID HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, CHRISTMAS EVE DAY, AND CHRISTMAS DAY (8).
- T. PAID HOLIDAYS: NEW YEAR'S DAY, PRESIDENTS' DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, THE LAST WORKING DAY BEFORE CHRISTMAS DAY, AND CHRISTMAS DAY (9).
- U. HOLIDAYS: NEW YEAR'S DAY, DAY BEFORE NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, THE FRIDAY AFTER THANKSGIVING DAY, THE DAY BEFORE CHRISTMAS DAY, CHRISTMAS DAY (9).
- V. PAID HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, DAY AFTER THANKSGIVING DAY, CHRISTMAS EVE DAY, CHRISTMAS DAY, EMPLOYEE'S BIRTHDAY, AND ONE DAY OF THE EMPLOYEE'S CHOICE (10).
- W. PAID HOLIDAYS: NEW YEAR'S DAY, DAY BEFORE NEW YEAR'S DAY, PRESIDENTS DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, DAY AFTER THANKSGIVING DAY, CHRISTMAS DAY, DAY BEFORE CHRISTMAS DAY (10).
- X. PAID HOLIDAYS: NEW YEAR'S DAY, DAY BEFORE OR AFTER NEW YEAR'S DAY, PRESIDENTS DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, DAY AFTER THANKSGIVING DAY, CHRISTMAS DAY, DAY BEFORE OR AFTER CHRISTMAS DAY, EMPLOYEE'S BIRTHDAY (11).

NOTE CODES

8. A. THE STANDBY RATE OF PAY FOR DIVERS SHALL BE ONE-HALF TIMES THE DIVERS RATE OF PAY. IN ADDITION TO THE HOURLY WAGE AND FRINGE BENEFITS, THE FOLLOWING DEPTH PREMIUMS APPLY TO DEPTHS OF FIFTY FEET OR MORE:
- OVER 50' TO 100' - \$1.00 PER FOOT FOR EACH FOOT OVER 50 FEET
OVER 100' TO 175' - \$2.25 PER FOOT FOR EACH FOOT OVER 100 FEET
OVER 175' TO 250' - \$5.50 PER FOOT FOR EACH FOOT OVER 175 FEET
OVER 250' - DIVERS MAY NAME THEIR OWN PRICE, PROVIDED IT IS NO LESS THAN THE SCALE LISTED FOR 250 FEET
- C. THE STANDBY RATE OF PAY FOR DIVERS SHALL BE ONE-HALF TIMES THE DIVERS RATE OF PAY. IN ADDITION TO THE HOURLY WAGE AND FRINGE BENEFITS, THE FOLLOWING DEPTH PREMIUMS APPLY TO DEPTHS OF FIFTY FEET OR MORE:
- OVER 50' TO 100' - \$1.00 PER FOOT FOR EACH FOOT OVER 50 FEET
OVER 100' TO 150' - \$1.50 PER FOOT FOR EACH FOOT OVER 100 FEET
OVER 150' TO 200' - \$2.00 PER FOOT FOR EACH FOOT OVER 150 FEET

BENEFIT CODE KEY - EFFECTIVE 09-01-04

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OVER 200' - DIVERS MAY NAME THEIR OWN PRICE

- D. WORKERS WORKING WITH SUPPLIED AIR ON HAZMAT PROJECTS RECEIVE AN ADDITIONAL \$1.00 PER HOUR.
- L. WORKERS ON HAZMAT PROJECTS RECEIVE ADDITIONAL HOURLY PREMIUMS AS FOLLOWS - LEVEL A: \$0.75, LEVEL B: \$0.50, AND LEVEL C: \$0.25.
- M. WORKERS ON HAZMAT PROJECTS RECEIVE ADDITIONAL HOURLY PREMIUMS AS FOLLOWS: LEVELS A & B: \$1.00, LEVELS C & D: \$0.50.
- N. WORKERS ON HAZMAT PROJECTS RECEIVE ADDITIONAL HOURLY PREMIUMS AS FOLLOWS - LEVEL A: \$1.00, LEVEL B: \$0.75, LEVEL C: \$0.50, AND LEVEL D: \$0.25.

*** * * Revised * * ***

Proposal For Bidding Purposes

For Construction of:

SR 16 MP 0.85 TO MP 4.67

UNION AVE. TO JACKSON AVE. - HOV

A State Project

PIERCE County

Sealed bids will be received in the Transportation Bid (Commission) Room (1D2) of the Transportation Building, 310 Maple Park Avenue SE, Olympia, Washington 98504-7360, until 11:00 AM, or at PO Box 47360, Olympia, Washington, 98504-7360, until 11:00 AM, on the date scheduled for opening bids.



Washington State Department of Transportation

*** * * Revised * * ***

**IS YOUR
SUBCONTRACTOR LIST
INCLUDED???**

IF NOT

**YOUR BID WILL BE
CONSIDERED
IRREGULAR**

**AND WILL BE
REJECTED!!!**

COPY

**SUBMIT THE
ENCLOSED PROPOSAL
BOND FORM WITH
YOUR PROPOSAL.**

**USE OF OTHER FORMS
MAY SUBJECT YOUR
BID TO REJECTION.**

**NOTE: Use of other forms may limit the
bond below an amount equal to
five percent of the bid total.**



Proposal Bond

KNOW ALL MEN BY THESE PRESENTS, That we,

of

as principal, and the

a corporation duly organized under the laws of the state of _____, and authorized to do business in the State of Washington, as surety, are held and firmly bound unto the State of Washington in the full and penal sum of five (5) percent of the total amount of the bid proposal of said principal for the work hereinafter described, for the payment of which, well and truly to be made, we bind our heirs, executors, administrators and assigns, and successors and assigns, firmly by these presents.

The condition of this bond is such, that whereas the principal herein is herewith submitting his or its sealed proposal for the following highway construction, to wit:

said bid and proposal, by reference thereto, being made a part hereof.

NOW, ~~THEREFORE~~, If the said proposal bid by said principal be accepted, and the contract be awarded to said principal, and if said principal shall duly make and enter into and execute said contract and shall furnish bond as required by the Department of Transportation within a period of twenty (20) days from and after said award, exclusive of the day of such award, then this obligation shall be null and void, otherwise it shall remain and be in full force and effect.

IN TESTIMONY WHEREOF, The principal and surety have caused these presents to be signed and sealed this _____ day of _____,

(Principal)

(Surety)

(Attorney-in-fact)

THIS CERTIFIES THAT THE UNDERSIGNED HAS EXAMINED THE LOCATION OF

SR 16 IN PIERCE COUNTY, MP 0.85 TO MP 4.67, UNION AVE. TO JACKSON AVE. - HOV, A STATE PROJECT,

AND THAT THE PLANS, SPECIFICATIONS AND CONTRACT GOVERNING THE WORK EMBRACED IN THIS IMPROVEMENT, AND THE METHOD BY WHICH PAYMENT WILL BE MADE FOR SAID WORK IS UNDERSTOOD. THE UNDERSIGNED HEREBY PROPOSES TO UNDERTAKE AND COMPLETE THE WORK EMBRACED IN THIS IMPROVEMENT, OR AS MUCH THEREOF AS CAN BE COMPLETED WITH THE MONEY AVAILABLE IN ACCORDANCE WITH THE SAID PLANS, SPECIFICATIONS AND CONTRACT, AND THE FOLLOWING SCHEDULE OF RATES AND PRICES:

(NOTE: UNIT PRICES FOR ALL ITEMS, ALL EXTENSIONS, AND TOTAL AMOUNT OF BID SHALL BE SHOWN. ALL ENTRIES MUST BE TYPED OR ENTERED IN INK.)

ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
PREPARATION				
1	LUMP SUM	MOBILIZATION (0001)	LUMP SUM	.
2	53.2 ACRE	CLEARING AND GRUBBING (0025)	AT PER ACRE	.
3	106. EACH	REMOVING DRAINAGE STRUCTURE (0049)	AT PER EACH	.
4	LUMP SUM	WORK ACCESS - BRIDGE NO. 16/20W ()	LUMP SUM	.
5	LUMP SUM	WORK ACCESS - BRIDGE NO. 16/20E ()	LUMP SUM	.
6	LUMP SUM	REMOVING PORTION OF EXISTING BRIDGE NO. 16/20W (0061)	LUMP SUM	.
7	LUMP SUM	REMOVING PORTION OF EXISTING BRIDGE NO. 16/20E (0061)	LUMP SUM	.
8	ESTIMATED	REMOVING OBSTRUCTIONS ()	ESTIMATED	145,000.00
9	LUMP SUM	REMOVAL OF STRUCTURE AND OBSTRUCTION (0050)	LUMP SUM	.

* - SHOW PRICE PER UNIT IN FIGURES ONLY. FIGURES WRITTEN TO THE RIGHT OF THE DOT (DECIMAL) IN THE PRICE PER UNIT COLUMN SHALL BE INTERPRETED AS CENTS.

ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
PREPARATION				
10	5,647. SQ. YD.	REMOVING CEMENT CONC. SIDEWALK (0100)	AT PER SQ. YD.	 .
11	8,945. LIN. FT.	REMOVING CEMENT CONC. CURB AND GUTTER (0108)	AT PER LIN. FT.	 .
12	3,040. SQ. YD.	REMOVING ASPHALT CONC. PAVEMENT (0120)	AT PER SQ. YD.	 .
13	17,004. LIN. FT.	REMOVING CONC. BARRIER (0145)	AT PER LIN. FT.	 .
14	415. SQ. YD.	REMOVING TRAFFIC ISLAND (0150)	AT PER SQ. YD.	 .
15	9,521. LIN. FT.	REMOVING GUARDRAIL (0170)	AT PER LIN. FT.	 .
16	20. EACH	REMOVING GUARDRAIL ANCHOR (0182)	AT PER EACH	 .
17	172. EACH	REMOVING GUIDE POST (0185)	AT PER EACH	 .
18	103,989. LIN. FT.	REMOVING PAINT LINE (0187)	AT PER LIN. FT.	 .
19	227. EACH	REMOVING PLASTIC TRAFFIC MARKING (0200)	AT PER EACH	 .
20	48. HUNDRED	REMOVING RAISED PAVEMENT MARKER (0208)	AT PER HUNDRED	 .
21	11,110. LIN. FT.	REMOVING CHAIN LINK FENCE (0220)	AT PER LIN. FT.	 .
GRADING				
22	489,380. CU. YD.	ROADWAY EXCAVATION INCL. HAUL (0310)	AT PER CU. YD.	 .

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SR 16
UNION AVE. TO JACKSON AVE. - HOV

ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
GRADING				
23	48,510. CU. YD.	POND EXCAVATION INCL HAUL ()	AT PER CU. YD.	 .
24	490. SQ. YD.	PAVEMENT REPAIR EXCAVATION INCL. HAUL (0332)	AT PER SQ. YD.	 .
25	58,040. TON	GRAVEL BORROW INCL. HAUL (0431)	AT PER TON	 .
26	2,750. CU. YD.	UNSUITABLE FOUNDATION EXCAVATION INCL. HAUL (0350)	AT PER CU. YD.	 .
27	194,180. CU. YD.	EMBANKMENT COMPACTION (0470)	AT PER CU. YD.	 .
28	ESTIMATED	FORCE ACCOUNT BENCH DRAIN (7715)	ESTIMATED	356,475.00

DRAINAGE				
29	10,057. CU. YD.	DITCH EXCAVATION INCL. HAUL (1030)	AT PER CU. YD.	 .
30	171. EACH	GRATE INLET TYPE 2 (1054)	AT PER EACH	 .
31	367. TON	QUARRY SHALLS (1086)	AT PER TON	 .
32	4,538. LIN. FT.	UNDERDRAIN PIPE 8 IN. DIAM. (1161)	AT PER LIN. FT.	 .
33	1,874. LIN. FT.	ECOLOGY DRAIN ()	AT PER LIN. FT.	 .

STORM SEWER				
34	4. EACH	CATCH BASIN TYPE 1L (3090)	AT PER EACH	 .
35	1. EACH	CATCH BASIN TYPE 2 WITH FLOW RESTRICTOR-OIL SEPARATOR (3090)	AT PER EACH	 .

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UNION AVE. TO JACKSON AVE. - HOV

ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
STORM SEWER				
36	23. EACH	CATCH BASIN TYPE 1 (3091)	AT PER EACH	 .
37	23. EACH	CATCH BASIN TYPE 2 48 IN. DIAM. (3105)	AT PER EACH	 .
38	26,035. LIN. FT.	TESTING STORM SEWER PIPE (3151)	AT PER LIN. FT.	 .
39	20. LIN. FT.	PLAIN CONC. STORM SEWER PIPE 8 IN. DIAM. (3392)	AT PER LIN. FT.	 .
40	670. LIN. FT.	CL. V REINF. CONC. STORM SEWER PIPE 18 IN. DIAM. (3482)	AT PER LIN. FT.	 .
41	2,092. LIN. FT.	SCHEDULE A STORM SEWER PIPE 12 IN. DIAM. (3541)	AT PER LIN. FT.	 .
42	21,371. LIN. FT.	SCHEDULE A STORM SEWER PIPE 18 IN. DIAM. (3542)	AT PER LIN. FT.	 .
43	377. LIN. FT.	SCHEDULE A STORM SEWER PIPE 24 IN. DIAM. (3543)	AT PER LIN. FT.	 .
44	34. LIN. FT.	SCHEDULE A STORM SEWER PIPE 36 IN. DIAM. (3545)	AT PER LIN. FT.	 .
45	1,425. LIN. FT.	SCHEDULE B STORM SEWER PIPE 18 IN. DIAM. (3551)	AT PER LIN. FT.	 .
46	6. EACH	OPEN FLOW RESTRICTOR ()	AT PER EACH	 .
47	9. EACH	SOLID COVER ()	AT PER EACH	 .
STRUCTURE				
48	11,693. CU. YD.	STRUCTURE EXCAVATION CLASS A INCL. HAUL (4006)	AT PER CU. YD.	 .

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
STRUCTURE				
49	LUMP SUM	SHORING OR EXTRA EXCAVATION CL. A FOR BRIDGE (4013)	LUMP SUM	.
50	LUMP SUM	SHORING OR EXTRA EXCAVATION CL. A FOR TUNNEL (4013)	LUMP SUM	.
51	LUMP SUM	SHORING OR EXTRA EXCAVATION CL. A FOR WALL (4013)	LUMP SUM	.
52	LUMP SUM	SHORING OR EXTRA EXCAVATION CL. A FOR SHAFT (4013)	LUMP SUM	.
53	3,318. CU. YD.	GRAVEL BACKFILL FOR WALL (4025)	AT PER CU. YD.	.
54	1,223. CU. YD.	SOIL EXCAVATION FOR SHAFT INCLUDING HAUL ()	AT PER CU. YD.	.
55	1,786. LIN. FT.	SHAFT 2FT DIAMETER ()	AT PER LIN. FT.	.
56	1,575. LIN. FT.	SHAFT 2FT 6IN DIAMETER ()	AT PER LIN. FT.	.
57	84. LIN. FT.	FURNISHING & PLACING TEMP. CASING FOR 6FT DIAM. SHAFT ()	AT PER LIN. FT.	.
58	144. LIN. FT.	FURNISHING PERMANENT CASING FOR 6FT DIAM. SHAFT ()	AT PER LIN. FT.	.
59	12. EACH	PLACING PERMANENT CASING FOR 6FT DIAM. SHAFT ()	AT PER EACH	.
60	200. LIN. FT.	FURNISHING PERMANENT CASING FOR 7FT 6IN DIAM SHAFT ()	AT PER LIN. FT.	.
61	6. EACH	PLACING PERMANENT CASING FOR 7FT 6IN DIAM. SHAFT ()	AT PER EACH	.
62	41. LIN. FT.	CASING SHORING ()	AT PER LIN. FT.	.

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UNION AVE. TO JACKSON AVE. - HOV

ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
STRUCTURE				
63	1,471. LIN. FT.	FURNISHING AND INSTALLING SOLDIER PILE - W18X106 ()	AT PER LIN. FT.	 .
64	496. LIN. FT.	FURNISHING AND INSTALLING SOLDIER PILE - W14X74 ()	AT PER LIN. FT.	 .
65	249. LIN. FT.	FURNISHING AND INSTALLING SOLDIER PILE - W12X40 ()	AT PER LIN. FT.	 .
66	300. LIN. FT.	FURNISHING AND INSTALLING SOLDIER PILE - W12X35 ()	AT PER LIN. FT.	 .
67	163. EACH	SOIL NAIL-EPOXY COATED ()	AT PER EACH	 .
68	128. EACH	SOIL NAIL-ENCAPSULATED ()	AT PER EACH	 .
69	6,245. SQ. FT.	SHOTCRETE FACING ()	AT PER SQ. FT.	 .
70	LUMP SUM	SOIL NAIL VERIFICATION TEST ()	LUMP SUM	.
71	476. LIN. FT.	SOIL NAIL WALL TRAFFIC BARRIER ()	AT PER LIN. FT.	 .
72	25. LIN. FT.	SOIL NAIL WALL LUMINAIRE BARRIER ()	AT PER LIN. FT.	 .
73	596,520. POUND	ST. REINF. BAR FOR BRIDGE (4149)	AT PER POUND	 .
74	352,000. POUND	ST. REINF. BAR FOR SHAFT (4151)	AT PER POUND	 .
75	7,474. POUND	ST. REINF. BAR FOR PILE CAP (4151)	AT PER POUND	 .
76	130,090. POUND	ST. REINF. BAR FOR WALL (4151)	AT PER POUND	 .

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UNION AVE. TO JACKSON AVE. - HOV

ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
STRUCTURE				
77	2,728. CU. YD.	CONC. CLASS 4000 FOR WALL (4202)	AT PER CU. YD.	.
78	57. CU. YD.	CONC. CLASS 4000 FOR PILE CAP (4202)	AT PER CU. YD.	.
79	2,249. CU. YD.	CONC. CLASS 4000 FOR BRIDGE (4322)	AT PER CU. YD.	.
80	1,200. CU. YD.	CONC. CLASS 4000P FOR SHAFT ()	AT PER CU. YD.	.
81	7,575. LIN. FT.	CSL ACCESS TUBE ()	AT PER LIN. FT.	.
82	CALCULATED	DEFICIENT STRENGTH CONC. PRICE ADJUSTMENT (4219)	CALCULATED	18.00
83	9,715. CU. FT.	MODIFIED CONC. OVERLAY (4232)	AT PER CU. FT.	.
84	8,635. SQ. YD.	FINISHING AND CURING MODIFIED CONC. OVERLAY (4233)	AT PER SQ. YD.	.
85	929. SQ. YD.	PREFABRICATED DRAINAGE MATERIAL ()	AT PER SQ. YD.	.
86	8,167. SQ. FT.	CONCRETE FASCIA PANEL ()	AT PER SQ. FT.	.
87	1,665. SQ. FT.	CERAMIC TILE TUNNEL LINING ()	AT PER SQ. FT.	.
88	LUMP SUM	STRUCTURAL LOW ALLOY STEEL (4235)	LUMP SUM	.
89	26. MBM	TIMBER LAGGING ()	AT PER MBM	.
90	24. EACH	FABRIC PAD BEARING - SUPERSTR. (4307)	AT PER EACH	.

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
STRUCTURE				
91	LUMP SUM	SUPERSTRUCTURE - BRIDGE NO. 16/20W WIDENING (4300)	LUMP SUM	.
92	LUMP SUM	SUPERSTRUCTURE -BRIDGE NO. 16/20E WIDENING (4300)	LUMP SUM	.
93	LUMP SUM	SUPERSTRUCTURE -BRIDGE NO. 16/24E (4300)	LUMP SUM	.
94	LUMP SUM	SUPERSTRUCTURE -BRIDGE NO. 16/30E (4300)	LUMP SUM	.
95	LUMP SUM	SUPERSTRUCTURE -BRIDGE NO. 16/31E (4300)	LUMP SUM	.
96	LUMP SUM	SUPERSTRUCTURE -19TH STREET BICYCLE TUNNEL (4300)	LUMP SUM	.
97	LUMP SUM	TEMPORARY PEDESTRIAN BRIDGE & APPROACH RAMPS ()	LUMP SUM	.
98	LUMP SUM	ROADWAY DECK - CENTER STREET FLYOVER RAMP (4311)	LUMP SUM	.
99	341. LIN. FT.	CONDUIT PIPE 3/4 IN. DIAM ()	AT PER LIN. FT.	.
100	890. LIN. FT.	CONDUIT PIPE 1 IN. DIAM. (4346)	AT PER LIN. FT.	.
101	6,148. LIN. FT.	CONDUIT PIPE 2 IN. DIAM. (4352)	AT PER LIN. FT.	.
102	982. LIN. FT.	BRIDGE RAILING TYPE BP (4410)	AT PER LIN. FT.	.
103		DELETED ITEM (7800)		.
104	160. LIN. FT.	COATED CHAIN LINK FENCE ()	AT PER LIN. FT.	.

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SR 16
UNION AVE. TO JACKSON AVE. - HOV

ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
STRUCTURE				
105	4,012. LIN. FT.	TRAFFIC BARRIER (4415)	AT PER LIN. FT.	.
106	1,858. LIN. FT.	PEDESTRIAN BARRIER ()	AT PER LIN. FT.	.
107	305. LIN. FT.	PEDESTRIAN RAILING TYPE BP ()	AT PER LIN. FT.	.
108	791. LIN. FT.	COATED CABLE SAFETY RAIL ()	AT PER LIN. FT.	.
109	666. LIN. FT.	CEMENT GUTTER ()	AT PER LIN. FT.	.
110		DELETED ITEM (7800)		.
111	ESTIMATED	BRIDGE DECK REPAIR (4445)	ESTIMATED	40,000.00
112		DELETED ITEM (7800)		.
113	8,635. SQ. YD.	SCARIFYING CONC. SURFACE (4456)	AT PER SQ. YD.	.
114	ESTIMATED	FURTHER DECK PREPARATION (4466)	ESTIMATED	45,000.00
115	2,580. SQ. FT.	NOISE BARRIER WALL TYPE C ()	AT PER SQ. FT.	.
116	8,244. SQ. FT.	NOISE BARRIER WALL TYPE 2C ()	AT PER SQ. FT.	.
117	18,292. SQ. FT.	NOISE BARRIER WALL TYPE 4C ()	AT PER SQ. FT.	.
118	3. EACH	NOISE BARRIER ACCESS DOOR TYPE 4 ()	AT PER EACH	.

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SR 16
UNION AVE. TO JACKSON AVE. - HOV

ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
SURFACING				
119	50,075. TON	CRUSHED SURFACING BASE COURSE (5100)	AT PER TON	 .
120	6,930. TON	CRUSHED SURFACING TOP COURSE (5120)	AT PER TON	 .
LIQUID ASPHALT				
121	ESTIMATED	ANTI-STRIPPING ADDITIVE (5334)	ESTIMATED	135,850.00
CEMENT CONCRETE PAVEMENT				
122	CALCULATED	RIDE SMOOTHNESS COMPLIANCE ADJUSTMENT (5637)	CALCULATED	37,300.00
123	CALCULATED	PORTLAND CEMENT CONC. COMPLIANCE ADJUSTMENT (5638)	CALCULATED	-1.00
124	3,417. SQ. YD.	BRIDGE APPROACH SLAB (5656)	AT PER SQ. YD.	 .
125	4,716. CU. YD.	CEMENT CONC. PAVEMENT - INCLUDING DOWELS (5679)	AT PER CU. YD.	 .
ASPHALT CONCRETE PAVEMENT				
126	30,966. SQ. YD.	PLANING BITUMINOUS PAVEMENT (5713)	AT PER SQ. YD.	 .
127	1,380. TON	HMA FOR PRELEVELING CL. 1/2 IN. PG (5717)	AT PER TON	 .
128	130,040. TON	HMA CL. 1/2 IN. PG 64-22 (5767)	AT PER TON	 .
129	CALCULATED	JOB MIX COMPLIANCE PRICE ADJUSTMENT (5830)	CALCULATED	174,890.00
130	CALCULATED	COMPACTION PRICE ADJUSTMENT (5835)	CALCULATED	100,700.00

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
ASPHALT CONCRETE PAVEMENT				
132	4,430. TON	COMMERCIAL HMA (5875)	AT PER TON	
EROSION CONTROL AND PLANTING				
131	400. DAY	ESC LEAD (6403)	AT PER DAY	
133	30.66 ACRE	SEEDING, FERTILIZING, AND MULCHING (6414)	AT PER ACRE	
134	17,307. CU. YD.	COMPOST TYPE 1 (6442)	AT PER CU. YD.	
135	59,050. SQ. YD.	PERMANENT EROSION CONTROL BLANKET (6452)	AT PER SQ. YD.	
136	1,220. LIN. FT.	CHECK DAM (6463)	AT PER LIN. FT.	
137	1,910. SQ. YD.	STABILIZED CONSTRUCTION ENTRANCE (6468)	AT PER SQ. YD.	
138	294. EACH	INLET PROTECTION (6471)	AT PER EACH	
139	20,000. LIN. FT.	STEEL FENCE (6373)	AT PER LIN. FT.	
140	3,690. LIN. FT.	COMPOST BERM (6374)	AT PER LIN. FT.	
141		DELETED ITEM (7800)		
142	ESTIMATED	EROSION/WATER POLLUTION CONTROL (6490)	ESTIMATED	1,000,000.00
143	17. EACH	PSIPE DOUGLAS FIR 2-3' B&B (6552)	AT PER EACH	

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
EROSION CONTROL AND PLANTING				
144	17. EACH	PSIPE WESTERN RED CEDAR 2-3' B&B (6552)	AT PER EACH	 .
145	17. EACH	PSIPE BEAKED HAZELNUT 18-24" B.R. (6552)	AT PER EACH	 .
146	17. EACH	PSIPE INDIAN PLUM 18-24" B.R. (6552)	AT PER EACH	 .
147	5. EACH	PSIPE BLACK COTTONWOOD 2-3' B.R. (6552)	AT PER EACH	 .
148	8. EACH	PSIPE OREGON ASH 2-3' B.R. (6552)	AT PER EACH	 .
149	8. EACH	PSIPE QUAKING ASPEN 2-3' B.R. (6552)	AT PER EACH	 .
150	5. EACH	PSIPE AVALANCHE ALDER 2-3' B.R. (6552)	AT PER EACH	 .
151	5. EACH	PSIPE SITKA WILLOW 2-3' B.R. (6552)	AT PER EACH	 .
152	5. EACH	PSIPE WESTERN CRABAPPLE 2-3' B.R. (6552)	AT PER EACH	 .
153	5. EACH	PSIPE BLACK HAWTHORN 2-3' B.R. (6552)	AT PER EACH	 .
154	5. EACH	PSIPE RED ELDERBERRY 2-3' B.R. (6552)	AT PER EACH	 .
155	432. EACH	PSIPE OREGON GRAPE 10-12" #1 CONTAINER (6552)	AT PER EACH	 .
156	432. EACH	PSIPE NOOTKA ROSE 18-24" B.R. (6552)	AT PER EACH	 .
157	432. EACH	PSIPE SNOWBERRY 18-24" #1 CONTAINER (6552)	AT PER EACH	 .

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
EROSION CONTROL AND PLANTING				
158	222. EACH	PSIPE BALD HIP ROSE 18-24" B.R. (6552)	AT PER EACH	 .
159	222. EACH	PSIPE OCEANSPRAY 18-24" B.R. (6552)	AT PER EACH	 .
160	222. EACH	PSIPE EVERGREEN HUCKLEBERRY 10-12" #1 CONTAINER (6552)	AT PER EACH	 .
161	222. EACH	PSIPE SERVICEBERRY 18-24" B.R. (6552)	AT PER EACH	 .
162	222. EACH	PSIPE TRAILING BLACKBERRY 6-12" B.R. (6552)	AT PER EACH	 .
163	222. EACH	PSIPE CREEPING SNOWBERRY 6-12" B.R. (6552)	AT PER EACH	 .
164	222. EACH	PSIPE CREEPING OREGON GRAPE 6-12" B.R. (6552)	AT PER EACH	 .
165	222. EACH	PSIPE SWORD FERN 10-12" #1 CONTAINER (6552)	AT PER EACH	 .
166	222. EACH	PSIPE PEAFRUIT ROSE 18-24" B.R. (6552)	AT PER EACH	 .
167	222. EACH	PSIPE RED TWIG DOGWOOD 18-24" B.R. (6552)	AT PER EACH	 .
168	222. EACH	PSIPE SALMONBERRY 18-24" B.R. (6552)	AT PER EACH	 .
169	222. EACH	PSIPE TWINBERRY 18-24" B.R. (6552)	AT PER EACH	 .
170	222. EACH	PSIPE THIMBLEBERRY 18-24" B.R. (6552)	AT PER EACH	 .
171	496. EACH	PSIPE SLOUGH SEDGE SEEDLING (6552)	AT PER EACH	 .

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
EROSION CONTROL AND PLANTING				
172		DELETED ITEM (7800)		.
173		DELETED ITEM (7800)		.
174	496. EACH	PSIPE COMMON RUSH SEEDLING (6552)	AT PER EACH	.
175	400. CU. YD.	BARK OR WOOD CHIP MULCH (6580)	AT PER CU. YD.	.
TRAFFIC				
176	126.7 LIN. FT.	SEW TRAFFIC BARRIER ()	AT PER LIN. FT.	.
177	5,979. LIN. FT.	CEMENT CONC. TRAFFIC CURB AND GUTTER (6700)	AT PER LIN. FT.	.
178	2,148. LIN. FT.	CEMENT CONC. TRAFFIC CURB (6701)	AT PER LIN. FT.	.
179	118. LIN. FT.	CEMENT CONC. PEDESTRIAN CURB (6707)	AT PER LIN. FT.	.
180	9,910. LIN. FT.	EXTRUDED CURB (6727)	AT PER LIN. FT.	.
181	528. LIN. FT.	TYPE C PRECAST TRAFFIC CURB (6732)	AT PER LIN. FT.	.
182	8. EACH	DETECTABLE WARNING PATTERN FOR TRAFFIC ISLAND ()	AT PER EACH	.
183	4,228. LIN. FT.	BEAM GUARDRAIL TYPE 1 (6751)	AT PER LIN. FT.	.
184	21. EACH	BEAM GUARDRAIL TRANSITION SECTION TYPE 1 (6760)	AT PER EACH	.

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
TRAFFIC				
185	18. EACH	BEAM GUARDRAIL FLARED TERMINAL (6716)	AT PER EACH	 .
186	3. EACH	BEAM GUARDRAIL BURIED TERMINAL TYPE 1 (6731)	AT PER EACH	 .
187	145. LIN. FT.	BEAM GUARDRAIL BURIED TERMINAL TYPE 2 (6733)	AT PER LIN. FT.	 .
188	7. EACH	BEAM GUARDRAIL ANCHOR TYPE 4 (6774)	AT PER EACH	 .
189	2,053. LIN. FT.	REMOVING AND RESETTING BEAM GUARDRAIL (6780)	AT PER LIN. FT.	 .
190	31,938. LIN. FT.	SINGLE SLOPE CONCRETE BARRIER (6763)	AT PER LIN. FT.	 .
191	62,551.5 LIN. FT.	TEMPORARY CONC. BARRIER (6781)	AT PER LIN. FT.	 .
192	1,553. LIN. FT.	REMOVING AND RESETTING EXISTING PERMANENT BARRIER (6784)	AT PER LIN. FT.	 .
193	3,531 LIN. FT.	VARIABLE HEIGHT SINGLE SLOPE CONC. BARRIER ()	AT PER LIN. FT.	 .
194	65. SQ. YD.	CEMENT CONC. CBP ()	AT PER SQ. YD.	 .
195	23. EACH	CAST-IN-PLACE CONC. BARRIER LIGHT STANDARD SECTION (6779)	AT PER EACH	 .
196	2. EACH	CAST-IN-PLACE CONC. BARRIER RAMP METER STD. SECTION ()	AT PER EACH	 .
197	14. EACH	TEMPORARY IMPACT ATTENUATOR (7440)	AT PER EACH	 .
198	4. EACH	PERMANENT IMPACT ATTENUATOR (7442)	AT PER EACH	 .

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
TRAFFIC				
199	ESTIMATED	REPAIR IMPACT ATTENUATOR (7444)	ESTIMATED	18,500.00
200	8. EACH	RESETTING IMPACT ATTENUATOR (7445)	AT PER EACH	.
201	3. EACH	TRUCK-MOUNTED IMPACT ATTENUATOR (7447)	AT PER EACH	.
202	1,440. HOUR	OPERATION OF TRUCK-MOUNTED IMPACT ATTENUATOR (7449)	AT PER HOUR	.
203	269. EACH	FLEXIBLE GUIDE POST (6832)	AT PER EACH	.
204	178. EACH	BARRIER DELINEATOR (6830)	AT PER EACH	.
205	141,510. LIN. FT.	PAINT LINE (6806)	AT PER LIN. FT.	.
206	54,360. LIN. FT.	PROFILED PLASTIC LINE (6809)	AT PER LIN. FT.	.
207	3,700. LIN. FT.	PROFILED PLASTIC DROP LANE LINE (6816)	AT PER LIN. FT.	.
208	4,970. LIN. FT.	PAINTED WIDE LINE (6817)	AT PER LIN. FT.	.
209	55,260. LIN. FT.	PLASTIC WIDE LINE (6818)	AT PER LIN. FT.	.
210	2,040. LIN. FT.	PLASTIC DOTTED WIDE LINE (6847)	AT PER LIN. FT.	.
211	6,280. SQ. FT.	PLASTIC CROSSWALK LINE (6857)	AT PER SQ. FT.	.
212	1,260. LIN. FT.	PLASTIC STOP LINE (6859)	AT PER LIN. FT.	.

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
TRAFFIC				
213	136. EACH	PLASTIC TRAFFIC ARROW (6833)	AT PER EACH	 .
214	40. EACH	PLASTIC TRAFFIC LETTER (6871)	AT PER EACH	 .
215	4. EACH	PLASTIC ACCESS PARKING SPACE SYMBOL (6863)	AT PER EACH	 .
216	33. EACH	PLASTIC HOV LANE SYMBOL TYPE 1 (6865)	AT PER EACH	 .
217	13. EACH	PLASTIC HOV LANE SYMBOL TYPE 2 (6865)	AT PER EACH	 .
218	352. EACH	PLASTIC DRAINAGE MARKING (6881)	AT PER EACH	 .
219	514. EACH	PLASTIC JUNCTION BOX MARKING ()	AT PER EACH	 .
220	126.6 HUNDRED	RAISED PAVEMENT MARKER TYPE 1 (6882)	AT PER HUNDRED	 .
221	24.9 HUNDRED	RAISED PAVEMENT MARKER TYPE 2 (6884)	AT PER HUNDRED	 .
222	460,200. LIN. FT.	TEMPORARY PAVEMENT MARKING (6888)	AT PER LIN. FT.	 .
223	LUMP SUM	PERMANENT SIGNING (6890)	LUMP SUM	
224	12. EACH	TRAIL MARKER ()	AT PER EACH	 .
225	1. EACH	TRAIL MAP STAND ()	AT PER EACH	 .
226	LUMP SUM	SIGN BRIDGE NO. 1 (6897)	LUMP SUM	 .

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
TRAFFIC				
227	LUMP SUM	SIGN BRIDGE NO. 2 (6897)	LUMP SUM	.
228	LUMP SUM	CANTILEVER SIGN STRUCTURE NO. 1 (6898)	LUMP SUM	.
229	LUMP SUM	CANTILEVER SIGN STRUCTURE NO. 2 (6898)	LUMP SUM	.
230	LUMP SUM	CANTILEVER SIGN STRUCTURE NO. 3 (6898)	LUMP SUM	.
231	LUMP SUM	CANTILEVER SIGN STRUCTURE NO. 4 (6898)	LUMP SUM	.
232	LUMP SUM	BRIDGE MOUNTED SIGN BRACKET NO. 1 (6899)	LUMP SUM	.
233	LUMP SUM	BRIDGE MOUNTED SIGN BRACKET NO. 2 (6899)	LUMP SUM	.
234		DELETED ITEM (7800)		.
235		DELETED ITEM (7800)		.
236	LUMP SUM	TEMPORARY ILLUMINATION SYSTEM SCA 1044 (6903)	LUMP SUM	.
237	LUMP SUM	TEMPORARY ILLUMINATION SYSTEM SCA 1446 (6903)	LUMP SUM	.
238	LUMP SUM	TEMPORARY ILLUMINATION SYSTEM SCA 1447 (6903)	LUMP SUM	.
239	LUMP SUM	TEMPORARY ILLUMINATION SYSTEM SCA 1589 (6903)	LUMP SUM	.
240	LUMP SUM	TEMPORARY ILLUMINATION SYSTEM SCA 1809 (6903)	LUMP SUM	.

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TRAFFIC				
241	LUMP SUM	TEMPORARY ILLUMINATION SYSTEM SCA 1810 (6903)	LUMP SUM	.
242	LUMP SUM	TEMPORARY ILLUMINATION SYSTEM SCA 2693 (6903)	LUMP SUM	.
243	LUMP SUM	TEMPORARY ILLUMINATION SYSTEM SCA 2694 (6903)	LUMP SUM	.
244	LUMP SUM	ILLUMINATION SYSTEM SCA 993 (6904)	LUMP SUM	.
245	LUMP SUM	ILLUMINATION SYSTEM SCA 1044 (6904)	LUMP SUM	.
246	LUMP SUM	ILLUMINATION SYSTEM SCA 1446 (6904)	LUMP SUM	.
247	LUMP SUM	ILLUMINATION SYSTEM SCA 1447 (6904)	LUMP SUM	.
248	LUMP SUM	ILLUMINATION SYSTEM SCA 1589 (6904)	LUMP SUM	.
249	LUMP SUM	ILLUMINATION SYSTEM SCA 1809 (6904)	LUMP SUM	.
250	LUMP SUM	ILLUMINATION SYSTEM SCA 1810 (6904)	LUMP SUM	.
251	LUMP SUM	ILLUMINATION SYSTEM SCA 2346 (6904)	LUMP SUM	.
252	LUMP SUM	ILLUMINATION SYSTEM SCA 2693 (6904)	LUMP SUM	.
253	LUMP SUM	ILLUMINATION SYSTEM SCA 2694 (6904)	LUMP SUM	.
254	LUMP SUM	TRAFFIC DATA ACCUMULATION AND RAMP METERING SYSTEM (6910)	LUMP SUM	.

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
TRAFFIC				
255	LUMP SUM	CLOSED CIRCUIT TELEVISION SYSTEM ()	LUMP SUM	.
256	LUMP SUM	COMMUNICATION CONDUIT SYSTEM ()	LUMP SUM	.
257	LUMP SUM	COMMUNICATION SYSTEM CABLES AND INTERFACES ()	LUMP SUM	.
258	LUMP SUM	VIDEO DISTRIBUTION AND VIDEO TRANSMISSION SYSTEM ()	LUMP SUM	.
259	LUMP SUM	DATA DISTRIBUTION AND TRANSMISSION SYSTEM ()	LUMP SUM	.
260	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 1 (6912)	LUMP SUM	.
261	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 2 (6912)	LUMP SUM	.
262	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 3 (6912)	LUMP SUM	.
263	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 4 (6912)	LUMP SUM	.
264	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 5 (6912)	LUMP SUM	.
265	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 6 (6912)	LUMP SUM	.
266	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 7 (6912)	LUMP SUM	.
267	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 8 (6912)	LUMP SUM	.
268	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 9 (6912)	LUMP SUM	.

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
TRAFFIC				
269	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 10 (6912)	LUMP SUM	.
270	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 11 (6912)	LUMP SUM	.
271	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 12 (6912)	LUMP SUM	.
272	LUMP SUM	TRAFFIC SIGNAL SYSTEM NO. 13 (6912)	LUMP SUM	.
273	3,450. HOUR	SEQUENTIAL ARROW SIGN (6956)	AT PER HOUR	.
274	4. EACH	PORTABLE CHANGEABLE MESSAGE SIGN (6994)	AT PER EACH	.
275	2,550. HOUR	OPERATION OF PORTABLE CHANGEABLE MESSAGE SIGN (6995)	AT PER HOUR	.
276	LUMP SUM	OTHER TEMPORARY TRAFFIC CONTROL (6973)	LUMP SUM	.
277		DELETED ITEM (7800)		.
278	LUMP SUM	TRAFFIC CONTROL SUPERVISOR (6974)	LUMP SUM	.
279	3,450. SQ. FT.	CONSTRUCTION SIGNS CLASS A (6982)	AT PER SQ. FT.	.
280		DELETED ITEM (7800)		.
OTHER ITEMS				
281	22,763. CU. YD.	STRUCTURE EXCAVATION CLASS B INCL. HAUL (7006)	AT PER CU. YD.	.

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
OTHER ITEMS				
282	108,301. SQ. FT.	SHORING OR EXTRA EXCAVATION CLASS B (7008)	AT PER SQ. FT.	 .
283	200. CU. YD.	GRAVEL BACKFILL FOR FOUNDATION CLASS B (7012)	AT PER CU. YD.	 .
284	348. CU. YD.	GRAVEL BACKFILL FOR DRAIN (7014)	AT PER CU. YD.	 .
285	46. EACH	PLUGGING EXISTING PIPE (7029)	AT PER EACH	 .
286	LUMP SUM	STRUCTURE SURVEYING (7037)	LUMP SUM	.
287	LUMP SUM	ROADWAY SURVEYING (7038)	LUMP SUM	.
288	35. EACH	BOLLARD TYPE 1 (7041)	AT PER EACH	 .
289	3. EACH	MONUMENT CASE, COVER, AND PIPE (7047)	AT PER EACH	 .
290	13. EACH	ADJUST MONUMENT CASE AND COVER (7380)	AT PER EACH	 .
291	5,392. SQ. YD.	CEMENT CONC. SIDEWALK (7055)	AT PER SQ. YD.	 .
292	237. SQ. YD.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1 (7059)	AT PER SQ. YD.	 .
293	3. EACH	CEMENT CONC. SIDEWALK RAMP TYPE 1A (7058)	AT PER EACH	 .
294	4. EACH	CEMENT CONC. SIDEWALK RAMP TYPE 1D (7058)	AT PER EACH	 .
295	14. EACH	CEMENT CONC. SIDEWALK RAMP TYPE 2A (7058)	AT PER EACH	 .

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
OTHER ITEMS				
296	3. EACH	CEMENT CONC. SIDEWALK RAMP TYPE 2A MODIFIED ()	AT PER EACH	 .
297	2. EACH	CEMENT CONC. SIDEWALK RAMP TYPE 3C (7058)	AT PER EACH	 .
298	7. EACH	CEMENT CONC. SIDEWALK RAMP TYPE 4A (7058)	AT PER EACH	 .
299	3. EACH	CEMENT CONC. SIDEWALK RAMP TYPE 4B (7058)	AT PER EACH	 .
300	4,884. SQ. YD.	CONC. SLOPE PROTECTION (7065)	AT PER SQ. YD.	 .
301	19,596. LIN. FT.	COATED CHAIN LINK FENCE TYPE 3 (7085)	AT PER LIN. FT.	 .
302	6,250. LIN. FT.	COATED CHAIN LINK FENCE TYPE 4 (7088)	AT PER LIN. FT.	 .
303	6,549. LIN. FT.	COATED CHAIN LINK FENCE TYPE 4 ON SINGLE SLOPE BARRIER ()	AT PER LIN. FT.	 .
304	525. LIN. FT.	COATED CHAIN LINK FENCE ON WALL ()	AT PER LIN. FT.	 .
305	232. EACH	COATED END GATE / CORNER PULLPOST FOR CHAIN LINK FENCE (7098)	AT PER EACH	 .
306	13. EACH	DOUBLE 20 FT. COATED CHAIN LINK GATE (7106)	AT PER EACH	 .
307	13,167. SQ. FT.	STRUCTURAL EARTH WALL (7169)	AT PER SQ. FT.	 .
308	6,426. CU. YD.	BACKFILL FOR STRUCTURAL EARTH WALL INCL. HAUL (7170)	AT PER CU. YD.	 .
309	77. EACH	ADJUST DRAINAGE STRUCTURE ()	AT PER EACH	 .

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
OTHER ITEMS				
310	1. EACH	ABANDON EXISTING MANHOLE (7345)	AT PER EACH	
311	33. EACH	CONNECTION TO DRAINAGE STRUCTURE (9605)	AT PER EACH	
312	5. EACH	MANHOLE 48 IN. DIAM. TYPE 1 (7360)	AT PER EACH	
313	2. EACH	MANHOLE 48 IN. DIAM. TYPE 2 (7360)	AT PER EACH	
314	39. EACH	MANHOLE 48 IN. DIAM. TYPE 3 (7360)	AT PER EACH	
315	3. EACH	MANHOLE 48 IN. DIAM. TYPE COT (7360)	AT PER EACH	
316	1. EACH	MANHOLE 72 IN. DIAM. TYPE 3 (7365)	AT PER EACH	
317	4.5 LIN. FT.	MANHOLE ADDITIONAL HEIGHT 48 IN. DIAM. TYPE 1 (7369)	AT PER LIN. FT.	
318	9.5 LIN. FT.	MANHOLE ADDITIONAL HEIGHT 48 IN. DIAM. TYPE 2 (7369)	AT PER LIN. FT.	
319	31.9 LIN. FT.	MANHOLE ADDITIONAL HEIGHT 48 IN. DIAM. TYPE 3 (7369)	AT PER LIN. FT.	
320	LUMP SUM	CLEANING EXISTING DRAINAGE STRUCTURE (7350)	LUMP SUM	
321	ESTIMATED	ROADSIDE CLEANUP (7480)	ESTIMATED	52,000.00
322	ESTIMATED	REIMBURSEMENT FOR THIRD PARTY DAMAGE (7725)	ESTIMATED	5.00
323	CALCULATED	MINOR CHANGE (7728)	CALCULATED	-1.00

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OTHER ITEMS				
324	LUMP SUM	SPCC PLAN (7736)	LUMP SUM	.
325	LUMP SUM	SITE MAINT. FOR BIO. AND PHYSICAL HAZARDS (7737)	LUMP SUM	.
326	LUMP SUM	FIELD OFFICE BUILDING (7500)	LUMP SUM	.
327	LUMP SUM	LANDMARK SCULPTURE ()	LUMP SUM	.
328	640. SQ. YD.	CONSTRUCTION GEOTEXTILE FOR UNDERGROUND DRAINAGE (7550)	AT PER SQ. YD.	.
329	LUMP SUM	VORTEX WATER ENHANCEMENT SYSTEM ()	LUMP SUM	.
330	1,550. LIN. FT.	TEMPORARY CHAIN LINK FENCE ()	AT PER LIN. FT.	.
331	ESTIMATED	FORCE ACCOUNT IRRIGATION SYSTEM ()	ESTIMATED	2,500.00
332	LUMP SUM	REMOVING MISCELLANEOUS TRAFFIC ITEMS ()	LUMP SUM	.
333	ESTIMATED	REMOVAL OF HAZARDOUS OR CONTAMINATED MATERIAL ()	ESTIMATED	5,000.00
334	110. HOUR	PARKING LOT SWEEPING ()	AT PER HOUR	.
335	238. LIN. FT.	FURNISHING AND PLACING TEMP. CASING FOR 4FT DIAM. SHAFT ()	AT PER LIN. FT.	.
336	50. EACH	INTERIM SIGNAL HEAD MODIFICATIONS ()	AT PER EACH	.
337	666.7 CU. YD.	LEAN CONCRETE (4166)	AT PER CU. YD.	.

* - SHOW PRICE PER UNIT IN FIGURES ONLY. FIGURES WRITTEN TO THE RIGHT OF THE DOT (DECIMAL) IN THE PRICE PER UNIT COLUMN SHALL BE INTERPRETED AS CENTS.

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ITEM NO.	PLAN QUANTITY	ITEM DESCRIPTION (STANDARD ITEM NUMBER)	PRICE PER UNIT DOLLARS *	TOTAL AMOUNT DOLLARS
OTHER ITEMS				
338	46,000. LIN. FT.	REMOVABLE PREFORMED TAPE ()	AT PER LIN. FT.	
339	3,745. SQ. YD.	MEMBRANE WATERPROOFING (DECK SEAL) (4455)	AT PER SQ. YD.	
340	5,365. LIN. FT.	HIGH VISIBILITY FENCE ()	AT PER LIN. FT.	
341	83. EACH	TEMPORARY PARKING STALL NUMBER ()	AT PER EACH	
342	5,000. HOUR	FLAGGERS AND SPOTTERS (6980)	AT PER HOUR	
343	6,001. HOUR	OTHER TRAFFIC CONTROL LABOR (6992)	AT PER HOUR	
CONTRACT TOTAL:				\$

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* - SHOW PRICE PER UNIT IN FIGURES ONLY. FIGURES WRITTEN TO THE RIGHT OF THE DOT (DECIMAL) IN THE PRICE PER UNIT COLUMN SHALL BE INTERPRETED AS CENTS.

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Proposal - Signature Page

The bidder is hereby advised that by signature of this proposal he/she is deemed to have acknowledged all requirements and signed all certificates contained herein.

A proposal guaranty in an amount of five percent (5%) of the total bid, based upon the approximate estimate of quantities at the above prices and in the form as indicated below is attached hereto:

Cash	<input type="checkbox"/>	In the Amount of _____
Cashier's Check	<input type="checkbox"/>	_____ Dollars
Certified Check	<input type="checkbox"/>	(\$ _____) Payable to the State Treasurer
Proposal Bond	<input type="checkbox"/>	In the Amount of 5% of the Bid

Receipt is hereby acknowledged of addendum(s) No.(s) _____, _____ & _____

Signature of Authorized Official(s)

Proposal Must be Signed →

Firm Name

Address

State of Washington Contractor's License No. _____

Federal ID No. _____

Note:

- (1) This proposal form is not transferable and any alteration of the firm's name entered hereon without prior permission from the Secretary of Transportation will be cause for considering the proposal irregular and subsequent rejection of the bid.
- (2) Please refer to section 1-02.6 of the standard specifications, re: "Preparation of Proposal," or "Article 4" of the Instruction to Bidders for building construction jobs.
- (3) Should it be necessary to modify this proposal either in writing or by electronic means, please make reference to the following proposal number in your communication _____



To Be Submitted with the Bid Proposal

Project Name _____

Failure to list subcontractors who are proposed to perform the work of heating, ventilation and air conditioning, plumbing, as described in Chapter 18.106 RCW, and electrical as described in Chapter 19.28 RCW will result in your bid being non-responsive and therefore void.

Subcontractor(s) that are proposed to perform the work of heating, ventilation and air conditioning, plumbing, as described in Chapter 18.106 RCW, and electrical as described in Chapter 19.28 RCW must be listed below. The work to be performed is to be listed below the subcontractor(s) name.

If no subcontractor is listed below, the bidder acknowledges that it does not intend to use any subcontractor to perform those items of work.

Subcontractor Name _____
Work to be Performed _____

Subcontractor Name _____
Work to be Performed _____

Subcontractor Name _____
Work to be Performed _____

Subcontractor Name _____
Work to be Performed _____

Subcontractor Name _____
Work to be Performed _____

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